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Water Resources Data for Washington

Part 2. Water Quality Records

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U.S. DEPARTMENT OF THE INTERIOR · MARCH 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of Washington
and with other agencies

1972

Water Resources Data for Washington

Part 2. Water Quality Records

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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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Prepared in cooperation with

Washington State Department of Ecology
Washington State Department of Fisheries
Washington State Department of Game
City of Tacoma, Department of Public Utilities
Confederated Tribes of the Colville Reservation
Yakima Tribal Council

Water resources records, 1972 for Washington are in the following reports of the U.S. Geological Survey:

1. Water Resources Data for Washington
   Part 1. Surface Water Records

2. Water Resources Data for Washington
   Part 2. Water Quality Records

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
Room 300, 1305 Tacoma Avenue South
Tacoma, Washington 98402

1973

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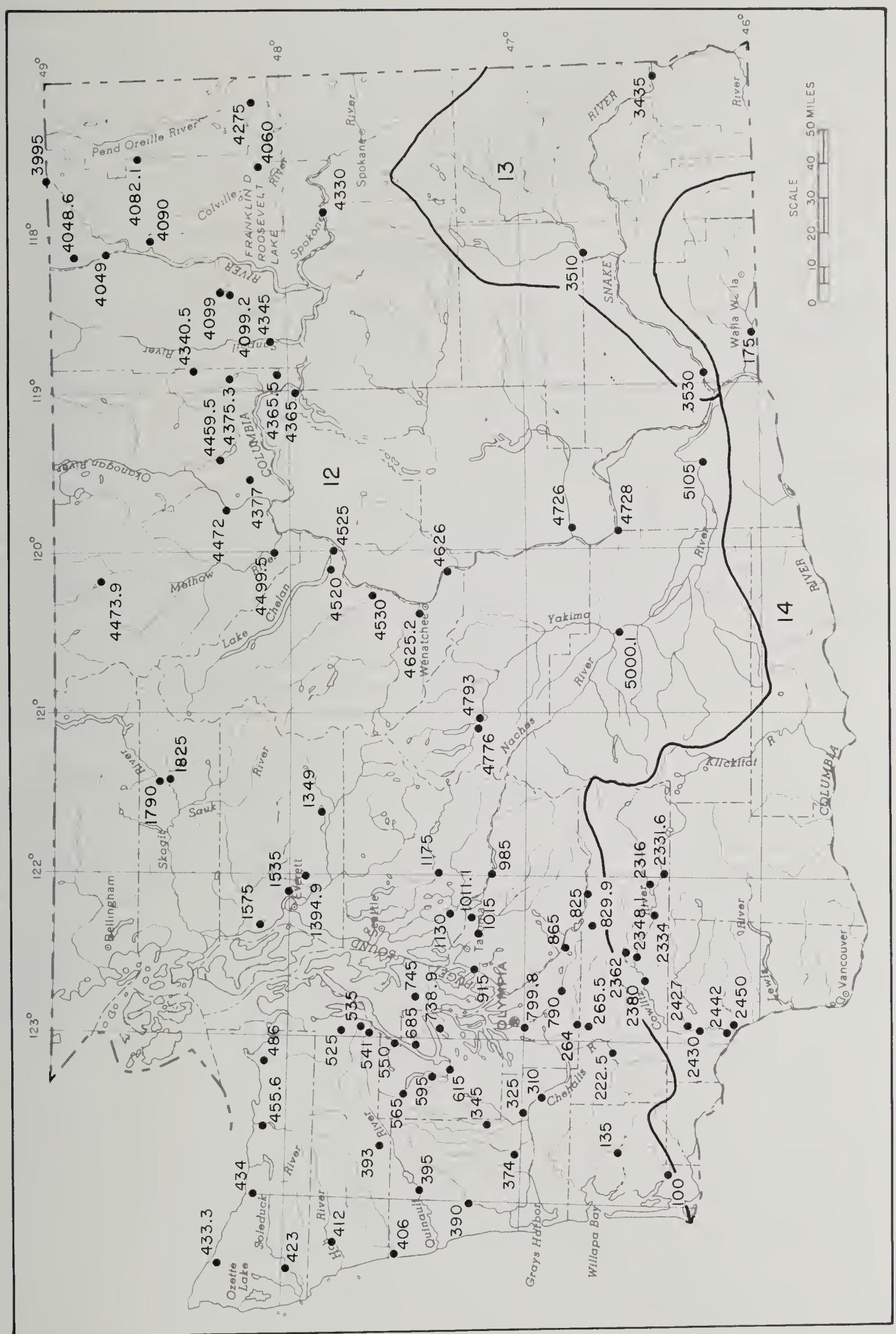

FIGURE 1. Map of Washington showing locations of continuous record sampling stations operated by the U.S. Geological Survey in cooperation with other agencies. Numbers shown are abbreviated versions of complete station number used in text.

WATER RESOURCES DATA FOR WASHINGTON, 1972
Part 2. Water Quality Records

INTRODUCTION

Water resources data for the 1972 water year for Washington include records of data for the chemical and physical characteristics of surface water. Data on the quality of surface water (chemical, temperature, and sediment) were collected from designated sampling sites at predetermined intervals such as once daily, weekly, monthly or less frequently. Records are given for 123 sampling stations of which 119 are continuous record stations and 4 are partial-record stations. Locations of the continuous-record sampling stations are shown in Figure 1. A few pertinent stations (not included above) in bordering States are also included. The records were collected by the Water Resources Division of the U.S. Geological Survey under the direction of L. B. Laird, district chief. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Washington.

The Geological Survey has published records of chemical quality, water temperatures, and sediment since 1941 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Beginning with the 1964 water year, water-quality records have been released by the Geological Survey in annual reports on a State-boundary basis. These reports are for limited distribution and are designed primarily for rapid release of data shortly after the end of the water year. These records will be published later in Geological Survey water-supply papers.

COOPERATION

This report was prepared by the U.S. Geological Survey under cooperative agreement with the following organizations:

Washington State Department of Ecology, J. A. Biggs, director.

Washington State Department of Fisheries, T. C. Tollefson, director.

Washington State Department of Game, C. N. Crouse, director.

City of Tacoma, Department of Public Utilities, C. A. Erdahl, director, succeeded by A. J. Benedetti.

Confederated Tribes of the Collville Reservation, Mel Tonasket, chairman, Colville Business Council.

Yakima Tribal Council, R. B. Jim, chairman.

Additional data or aid were furnished by the Washington State Department of Ecology and Public Utilities District No. 1 of Chelan County.

DEFINITION OF TERMS

Terms related to water-quality and hydrologic data, as used in this report are defined as follows:

Acre-foot (AC FT, ac-ft) is a quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons.

Bed material is the shifting portion of fragmented alluvial material of which the streambed is composed.

Biochemical oxygen demand (BOD) is the amount of oxygen required by bacteria while stablizing decomposable organic matter under aerobic conditions.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons, and represents a runoff of approximately 0.0372 inches from 1 square mile.

Chemical oxygen demand (COD) indicates the quantity of oxidizable compounds in water and varies with water composition(s), temperature, period of contact, and other factors.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

Cubic foot per second (cfs,CFS) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

Drainage area of a stream at a specified location is that area, measured in horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or body of impounded surface water together with all tributary surface stream and bodies of impounded surface water.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per liter (µg/l,UG/L) is a unit expressing the concentration of chemical constituents in solution as weight (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (mg/l,MG/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams or micrograms per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in table 1, page 5. Concentration of suspended sediment also is expressed in mg/l, and is based on the weight of sediment per liter of water-sediment mixture. Sediment concentrations may be converted to parts per million by using the factors in table 2, p. 5.

Partial-record station is a particular site where limited streamflow or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling) (Guy, 1969).

Particle-size classification, used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation.
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in

Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})*...	0.11119	Iodide (I^{-1}).....	0.00788
Ammonia as NH_4^{+1}...	.05544	Iron (Fe^{+3})*.....	.05372
Barium (Ba^{+2}).....	.01456	Lead (Pb^{+2})*.....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})*...	.14411
Bromide (Br^{-1}).....	.01251	Magnesium (Mg^{+2})..	.08226
Calcium (Ca^{+2}).....	.04990	Manganese (Mn^{+2})*.	.03640
Carbonate (CO_3^{-2})..	.03333	Nickel (Ni^{+2})*....	.03406
Chloride (Cl^{-1})....	.02821	Nitrate (NO_3^{-1})...	.01613
Chromium (Cr^{+6})*...	.11539	Nitrite (NO_2^{-1})...	.02174
Cobalt (Co^{+2})*.....	.03394	Phosphate (PO_4^{-3}).	.03159
Copper (Cu^{+2})*.....	.03148	Potassium (K^{+2})...	.02557
Cyanide (CN^{-1}).....	.03844	Sodium (Na^{+1}).....	.04350
Fluoride (F^{-1}).....	.05264	Strontium (Sr^{+2})*.	.02283
Hydrogen (H^{+1}).....	.99209	Sulfate (SO_4^{-2})...	.02082
Hydroxide (OH^{-1})...	.05880	Zinc (Zn^{+2})*.....	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Table 2.--Factors for conversion of sediment concentration in milligrams per liter to parts per million*
(All values calculated to three significant figures)

Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170- -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

*Based on water density of 1.000 g/ml and a specific gravity of sediment of 2.65.

the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis (Guy, 1969).

Plankton is the floating (or weakly swimming) animal or plant life in a body of water consisting chiefly of minute plants (as diatoms and blue-green algae) and of minute animals (as protozoan, entomostracans, and various larvae).

Sediment is solid material that originates mostly from disintegrated rocks and is transformed by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time. It is computed by multiplying discharge times mg/l times 0.0027.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/l).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph or a digital mechanism that automatically records water temperature on paper tape.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the water year.

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of

individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

International Hydrological Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and the general distribution of water in the principal river basins of the conterminous United States and Alaska.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to water year 1966, the data for these stations were published in the annual water-supply paper series, "Quality of Surface Waters for Irrigation, Western States."

Pesticide program is a network of regularly sampled water-quality stations where additonal monthly samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

DOWNSTREAM ORDER AND STATION NUMBER

Stations are listed in downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the list of water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each water-quality station, gaging station, and partial-record station has been assigned a station number. These are in the same dowstream order used in this report. In assigning station numbers, no distinction is made between partial-record and continuous-record stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 12149000 which appears just to the left of the station name includes the 2-digit part number "12" plus the 6-digit downstream order number "149000." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 12 (Pacific slope basins in Washington and upper Columbia River basin), Part 13 (Snake River basin), and Part 14 (Pacific slope basins in Oregon and lower Columbia River basin). All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports bv station number to include all records in the basin.

COLLECTION AND EXAMINATION OF DATA

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads. Discharge records for

streams in Washington have been released in the report, "Water Resources Data for Washington, 1972, Part 1. Surface Water Records."

The data in this report include a description of the sampling station and tabulations of the samples analyzed. The description of the sampling station gives the location, drainage area, periods of record for the various water-quality data, extremes of the pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations.

Water-quality information is presented for chemical quality, biological, microbiological, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ratio, specific conductance, and pH. The biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimums and maximums are obtained. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the U.S. Geological Survey began reporting data for chemical constituents and concentrations of suspended sediment in milligrams per liter (mg/l) and water temperatures in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. Temperatures reported in degrees Fahrenheit may be converted to degrees Celsius by using the table on page 11.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor

elements in micrograms per liter instead of milligrams per liter. (See "Definition of Terms," p. 5.)

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

*C = 5/9 (°F - 32) or °F = 9/5 (°C) + 32.

Solutes

The methods of collecting and analyzing water samples for determining the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge depending on the source of material and the turbulence and the mixing of the stream. Some must be sampled at several verticals across the channel to determine accurately the solute load.

The daily chemical quality data in this report generally represent equal-volume composites for 2- to 30-day periods;

the composite periods are selected on the basis of specific conductance of the daily samples and fluctuation of water discharge.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken at about the same time each day when sample is collected. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and the monthly averages.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the sub-divided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the sub-divided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

WATER-SUPPLY PAPERS

The annual series of water-supply papers that give information on quality of surface waters in Washington are shown in the following table.

Table 4.--Water-supply paper numbers and parts, water years 1947-70

Year	Parts 9-14	Year	Parts 9-14	Year	Parts 12-16
1947	1102	1956	1453	1964	A1959
1948	1133	1957	1523	1965	1966
1949	1163	1958	1574	1966	1996
1950	1189	1959	1645	1967	B2016
1951	1200	1960	1745	1968	B2100
1952	1253	1961	1885	1969	B2150
1953	1293	1962	1945	1970	B2160
1954	1353	1963	1951	----	----
1955	1403	----	----	----	----

A Parts 12-15. B In press.

SELECTED REFERENCES

American Public Health Association, and others 1971, Standard methods for the examination of water and wastewater, 13th ed.: Am. Public Health Assoc., New York, 874 p.

Brown, Eugene, Skougstad, M. W., and Fishman, M. J., 1970, Methods for collection and analysis of water samples for dissolved minerals and gases: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. A1, 160 p.

Colby, B. R., 1963, Fluvial sediments--a summary of source, transportation, deposition, and measurement of sediment discharge: U.S. Geol. Survey Bull. 1181-A, 47 p.

Colby, B. R., and Hembree, C. H., 1955, Computations of total sediment discharge, Niobrara River near Cody, Nebraska: U.S. Geol. Survey Water-Supply Paper 1357, 187 p.

Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geol. Survey Water-Supply Paper 1593, 17 p.

Guy, H. P., 1970, Fluvial sediment concepts: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. C1, 55 p.

_____ 1969, Laboratory theory and methods for sediment analysis: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. C1, 57 p.

Guy, H. P., and Norman, V. W., 1970, Field methods for measurement of fluvial sediment: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. C2, 59 p.

Hem, J. D., 1970, Study and interpretation of the chemical characteristics of natural water, 2d ed.: U.S. Geol. Survey Water-Supply Paper 1473, 363 p.

Laird, L. B., 1964, Chemical quality of surface waters of the Snake River basin: U.S. Geol. Survey Prof. Paper 417D, 47 p.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.

Porterfield, George, 1972, Computations of fluvial-sediment discharge: U.S. Geol. Survey Techniques of Water Resources Inv., book 3, chap. C3, 66 p.

Ritter, J. R., and Helley, E. J., 1969, Optical method for determining particle sizes of coarse sediment: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. C3, 33 p. (open file).

U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

_____ 1941, Methods of analyzing sediment samples: Rept. 4.

_____ 1953, Accuracy of sediment size analyses made by the bottom-withdrawal-tube method: Rept. 10.

_____ 1957, The development and calibration of visual accumulation tube: Rept. 11.

_____ 1957, Some fundamentals of particle size analysis: Rept. 12.

_____ 1959, Federal Inter-agency sedimentation instruments and reports: Rept. AA.

_____ 1961, The single stage sampler for suspended sediment: Rept. 13.

_____ 1963, Determinations of fluvial sediment discharge: Rept. 14.

NASELLE RIVER BASIN

12010000 NASELLE RIVER NEAR NASELLE, WASH.

LOCATION.--Lat 46°22'27", long 123°44'32", in SW¼SW¼ sec.1, T.10 N., R.9 W., Pacific County, temperature recorder at gaging station on right bank 0.1 mile upstream from county highway bridge, 2.2 miles upstream from Salmon Creek, 3.4 miles east of Naselle and at mile 17.4.

DRAINAGE AREA.--54.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1970.
Water temperatures: August 1963 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 22.0°C Aug. 7; minimum, 2.0°C Jan. 28, Feb. 2, 3, 4.

Period of record:
Water temperatures: Maximum, 23.0°C July 30, 1965, Aug. 15, 17, 1967; minimum, 2.0°C Dec. 31, 1968, Jan. 27-31, 1969, Jan. 28, Feb. 2, 3, 4, 1972.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	9.5	7.0	6.5	8.0	6.5	6.0	5.5	4.0	3.0	6.5	6.0
2	11.0	10.0	7.0	6.5	7.0	6.5	6.0	5.0	3.0	2.0	6.5	6.5
3	11.5	10.5	8.0	7.0	6.5	6.5	5.0	4.5	2.0	2.0	6.5	6.5
4	13.0	11.0	8.0	7.0	6.5	5.5	5.0	4.5	3.5	2.0	6.5	6.0
5	13.0	11.5	7.0	5.5	8.0	6.0	5.5	5.0	4.0	3.5	7.0	6.5
6	13.5	13.0	6.5	5.5	7.0	6.5	6.5	5.5	4.5	4.0	7.0	6.5
7	13.0	11.0	7.0	6.5	6.5	5.5	6.5	6.0	5.0	4.5	7.0	6.0
8	12.0	11.0	7.0	7.0	6.5	5.0	6.0	5.5	6.0	5.0	8.0	6.0
9	12.0	11.0	7.0	7.0	6.5	6.5	6.5	6.0	6.0	5.0	8.0	8.0
10	13.0	12.0	8.0	7.0	6.5	6.0	6.0	6.0	5.5	4.5	8.5	8.0
11	13.0	13.0	8.5	8.0	6.0	5.5	6.5	6.0	6.0	5.5	8.5	8.0
12	13.0	11.5	8.5	8.5	6.0	5.5	6.5	6.5	6.0	5.5	8.5	8.5
13	12.0	11.5	8.5	8.0	6.0	6.0	6.5	6.5	6.0	6.0	8.5	8.5
14	11.5	10.0	8.0	8.0	6.5	6.0	6.5	6.5	6.0	5.5	8.5	8.0
15	10.0	9.5	8.0	8.0	6.5	6.0	6.5	6.5	6.5	6.0	8.5	8.5
16	9.5	8.0	8.0	7.0	6.5	6.5	6.5	6.0	7.0	6.5	9.5	8.5
17	8.0	7.0	7.0	6.0	7.0	6.5	6.5	6.5	7.0	6.5	9.5	8.5
18	9.0	8.0	7.0	6.5	7.0	6.0	6.5	6.0	8.0	7.0	9.5	8.5
19	9.5	9.0	8.0	7.0	6.5	6.0	7.0	6.5	8.0	7.0	9.0	8.0
20	9.5	9.0	8.5	8.0	6.5	5.5	8.0	7.0	7.0	6.5	8.5	8.0
21	9.0	8.5	8.5	8.0	5.5	5.0	8.0	7.0	7.0	6.0	8.5	8.0
22	9.0	9.0	8.0	6.5	6.0	5.5	7.0	7.0	7.0	6.5	8.5	8.0
23	9.0	9.0	7.0	6.5	6.0	5.5	7.0	5.5	6.5	6.5	8.0	6.5
24	9.0	8.5	8.0	7.0	6.0	6.0	5.5	5.0	6.5	6.0	8.0	6.5
25	9.0	9.0	7.0	7.0	6.0	6.0	5.0	4.5	6.5	6.0	7.0	5.5
26	9.0	8.0	8.0	7.0	6.0	5.0	5.0	4.0	6.5	6.0	7.0	6.0
27	8.0	6.0	8.0	8.0	5.0	4.5	4.0	3.5	8.0	6.5	8.0	6.5
28	6.0	5.0	8.0	8.0	5.0	4.5	3.5	2.0	8.0	8.0	8.0	6.5
29	5.5	5.0	8.0	8.0	5.0	4.5	3.5	3.0	8.0	6.5	8.0	6.0
30	6.0	5.5	8.0	8.0	5.0	5.0	3.5	3.0	---	---	8.5	6.0
31	6.5	5.5	---	---	5.5	5.0	4.0	3.5	---	---	8.5	7.0
MONTH	13.5	5.0	8.5	5.5	8.0	4.5	8.0	2.0	8.0	2.0	9.5	5.5

12010000 NASELLE RIVER NEAR NASELLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	8.0	9.5	7.0	15.5	11.5	18.5	14.0	17.0	16.0	19.5	16.0
2	8.5	6.5	10.5	9.0	16.0	11.5	19.5	15.5	16.5	15.5	20.0	16.5
3	8.5	6.5	12.0	9.5	15.5	13.5	21.0	16.5	19.0	15.5	20.0	17.0
4	8.5	8.5	13.5	10.5	15.5	12.0	21.0	17.0	19.5	16.5	19.0	18.0
5	9.0	8.5	13.0	11.0	16.0	12.0	20.0	17.0	20.0	17.0	18.5	17.0
6	9.0	6.5	12.0	10.0	16.5	14.0	19.0	16.0	21.0	17.0	18.0	16.0
7	6.5	6.0	10.5	9.5	15.5	13.5	16.0	14.5	22.0	18.0	16.5	15.5
8	6.5	6.0	10.0	10.0	15.0	13.0	16.0	14.5	21.5	19.5	16.0	14.5
9	8.0	6.0	10.5	9.5	14.5	13.0	16.5	14.5	21.0	19.0	15.0	13.5
10	7.0	6.0	12.0	9.0	15.0	11.5	15.5	14.0	20.5	18.5	14.5	13.0
11	7.0	6.5	13.5	9.5	14.0	13.0	14.0	14.0	19.5	16.5	14.5	12.0
12	7.0	5.5	15.0	11.0	13.5	12.0	14.0	13.5	19.0	15.5	15.0	13.0
13	8.0	6.0	15.5	12.0	16.0	12.0	13.5	13.0	18.0	15.5	15.5	13.0
14	8.0	7.0	15.5	13.5	15.5	14.5	16.0	13.0	16.5	15.0	16.0	13.5
15	8.5	7.0	14.0	11.5	14.5	13.5	18.0	14.5	16.5	16.0	15.5	14.5
16	8.0	6.0	11.5	11.0	14.5	13.0	19.5	15.5	17.0	15.0	15.5	14.5
17	8.0	5.5	11.0	10.0	15.5	12.0	20.5	16.5	16.5	16.0	15.5	14.0
18	8.0	6.0	10.5	9.0	18.0	14.0	19.0	17.0	18.0	14.5	14.0	12.0
19	8.0	6.5	14.0	9.5	18.5	14.5	19.0	15.0	18.0	16.5	13.0	11.5
20	8.0	7.0	14.0	11.5	17.0	15.5	19.5	15.5	17.0	16.0	13.0	13.0
21	8.5	7.0	13.0	11.0	15.5	14.0	19.0	16.0	17.0	16.0	13.0	12.0
22	8.5	6.0	11.5	10.5	14.0	13.0	19.5	16.5	18.5	16.0	12.0	11.5
23	8.5	6.5	11.0	10.0	13.5	12.0	18.5	16.0	19.0	16.5	11.5	10.5
24	8.5	8.0	10.0	9.5	13.0	13.0	17.0	15.0	19.5	16.5	11.0	10.5
25	8.5	8.0	13.0	8.5	13.0	12.0	18.0	15.5	20.0	17.0	10.5	9.5
26	10.0	8.0	15.5	10.5	13.0	12.0	18.5	15.0	20.0	17.0	10.0	9.0
27	10.5	8.5	16.5	13.0	15.0	13.0	18.5	15.0	20.5	17.0	9.5	8.5
28	10.5	8.5	18.0	14.0	16.5	14.0	19.0	15.0	20.0	18.0	9.0	9.0
29	8.5	6.5	17.0	14.5	18.0	15.0	19.0	15.5	19.5	17.0	10.5	9.0
30	9.0	6.5	17.0	14.0	18.5	14.5	19.5	16.0	18.5	15.5	11.0	10.0
31	---	---	15.5	13.5	---	---	18.5	17.0	18.5	15.5	---	---
MONTH	10.5	5.5	18.0	7.0	18.5	11.5	21.0	13.0	22.0	14.5	20.0	8.5

12013500 WILLAPA RIVER NEAR WILLAPA, WASH.

LOCATION.--Lat 46°39'00", long 123°39'10", in NW corner sec.2, T.13 N., R.8 W., Pacific County, at Bullard Road bridge, 0.5 mile downstream from gaging station and Mill Creek, 1.8 miles southeast of Willapa, and at mile 17.7.

DRAINAGE AREA.--130 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	1530	502	4.2	1.1	5.0	.6	21	17	4.5	--	.010	.02
DEC.												
14...	1600	2740	2.9	.9	4.5	.5	13	11	4.4	.28	.000	.05
FEB.												
08...	1630	836	3.5	1.0	4.2	.7	16	13	5.0	.38	.000	.11
APR.												
11...	1630	1300	3.3	.9	5.1	.8	19	16	4.2	.28	.010	.10
JUNE												
13...	1630	82	4.4	1.3	5.4	.5	29	24	4.2	.21	.010	.06
AUG.												
08...	1630	25	4.9	1.5	6.1	.7	29	24	3.3	.26	.000	.07

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	.55	.000	.010	15	0	61	7.3	8.1	38	2	11.7	1200
DEC.												
14...	.90	.000	.020	11	0	51	6.9	7.0	11	15	11.6	1200
FEB.												
08...	.10	.010	.020	13	0	49	7.3	7.3	29	7	12.1	600
APR.												
11...	.64	.000	.050	12	0	50	7.1	5.4	17	4	12.0	300
JUNE												
13...	1.4	.000	.020	16	0	70	7.3	18.8	27	2	10.3	375
AUG.												
08...	.09	.010	.030	18	0	78	7.4	25.0	30	2	8.6	150

12017000 NORTH RIVER NEAR RAYMOND, WASH.

LOCATION.--Lat 46°48'27", long 123°50'58", in SE¼SW¼ sec.6, T.15 N., R.9 W., Grays Harbor County, temperature recorder at gaging station on left bank, 1.2 miles upstream from Salmon Creek, 10 miles northwest of Raymond, and at mile 6.9.

DRAINAGE AREA.--219 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1963 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 22.0°C Aug. 7; minimum, 2.0°C Jan. 28-Feb. 3.

Period of record:
Water temperatures: Maximum, 23.5°C Aug. 15, 18, 19, 1967; minimum, 1.0°C Jan. 28-31, 1969.

REMARKS.--Recorder stopped Oct. 24 to Nov. 10 and June 6-13; range in temperature 6.5°C to 9.5°C and 14.5°C to 16.5°C, respectively.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	10.5	---	---	8.0	8.0	4.5	4.0	2.0	2.0	6.5	6.0
2	11.0	10.5	---	---	8.0	7.0	4.5	4.5	2.0	2.0	6.0	6.0
3	11.0	11.0	---	---	7.0	6.5	4.5	4.0	3.0	2.0	6.0	6.0
4	11.5	11.0	---	---	6.5	6.0	4.0	3.5	3.0	3.0	6.0	6.0
5	13.0	11.5	---	---	6.5	6.0	4.5	3.5	3.0	3.0	6.0	6.0
6	13.5	13.0	---	---	6.5	6.5	5.0	4.5	4.0	3.0	6.0	6.0
7	14.0	13.5	---	---	6.5	6.0	5.5	5.0	4.5	4.0	6.0	6.0
8	14.0	13.5	---	---	6.0	5.5	5.5	5.5	5.0	4.5	6.0	6.0
9	14.0	13.5	---	---	6.0	5.5	5.5	5.5	5.5	5.0	6.5	6.0
10	13.5	13.5	---	---	6.0	6.0	5.5	5.5	5.5	5.5	6.5	6.5
11	13.5	13.5	8.5	8.5	6.0	6.0	5.5	5.5	5.5	5.5	7.0	6.5
12	14.0	13.5	9.0	8.5	6.0	6.0	5.5	5.5	5.5	5.5	7.0	7.0
13	14.0	13.5	9.0	9.0	6.0	5.5	5.5	5.5	6.0	5.5	8.5	7.0
14	13.5	13.0	9.0	9.0	5.5	5.5	5.5	5.0	6.0	6.0	8.5	8.5
15	13.0	12.0	9.0	9.0	5.5	5.5	5.5	5.5	6.0	6.0	8.5	8.5
16	12.0	11.0	9.0	9.0	5.5	5.5	5.5	5.5	6.5	6.0	8.5	8.5
17	11.0	10.5	9.0	8.5	6.5	5.5	5.5	5.5	6.5	6.5	9.0	8.5
18	10.5	10.5	8.5	8.5	6.5	6.5	5.5	5.5	6.5	6.5	9.0	9.0
19	10.5	10.0	8.5	8.0	6.5	6.0	5.5	5.5	7.0	6.5	9.0	9.0
20	10.0	10.0	8.5	8.5	6.0	6.0	6.5	5.5	7.0	6.5	9.0	9.0
21	10.0	9.5	8.5	8.5	6.0	5.5	6.5	6.5	6.5	6.5	9.0	8.5
22	9.5	9.5	8.5	8.0	5.5	5.0	6.5	6.5	6.5	6.0	8.5	8.5
23	9.5	9.5	8.0	7.0	5.0	5.0	6.5	6.5	6.0	6.0	8.5	8.5
24	9.5	---	7.0	7.0	5.0	5.0	6.5	5.5	6.0	6.0	8.5	8.0
25	---	---	7.0	7.0	5.5	5.0	5.5	4.5	6.0	6.0	8.0	7.0
26	---	---	7.0	7.0	5.5	5.0	4.5	4.0	6.0	6.0	7.0	7.0
27	---	---	7.0	7.0	5.0	4.5	4.0	3.5	6.5	6.0	7.0	7.0
28	---	---	8.0	7.0	4.5	3.5	3.5	2.0	7.0	6.5	7.0	7.0
29	---	---	8.0	8.0	3.5	3.5	2.0	2.0	7.0	6.5	7.0	7.0
30	---	---	8.0	8.0	4.0	3.5	2.0	2.0	---	---	7.0	7.0
31	---	---	---	---	4.0	4.0	2.0	2.0	---	---	7.0	7.0
MONTH	---	---	---	---	8.0	3.5	6.5	2.0	7.0	2.0	9.0	6.0

12017000 NORTH RIVER NEAR RAYMOND, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	7.0	8.5	8.0	16.0	15.5	18.5	16.5	19.5	19.0	19.0	16.5
2	8.0	8.0	9.0	8.0	16.0	15.5	19.5	17.0	19.0	19.0	19.0	16.5
3	8.0	8.0	10.0	9.0	16.0	16.0	20.5	18.5	20.0	18.5	19.0	17.0
4	8.0	8.0	11.0	10.0	16.0	16.0	21.0	19.5	20.5	19.0	18.0	17.0
5	8.5	8.0	11.5	11.0	16.5	16.0	21.0	20.0	21.0	20.0	17.0	16.5
6	8.5	8.0	11.5	11.0	---	---	20.0	19.0	21.5	20.0	16.5	16.0
7	8.0	7.0	11.0	10.5	---	---	19.0	18.5	22.0	21.0	16.5	16.0
8	7.0	7.0	10.5	10.5	---	---	18.5	18.0	21.5	21.0	16.0	15.5
9	7.0	7.0	10.5	10.0	---	---	18.0	17.0	22.0	21.0	15.5	15.5
10	7.0	6.5	10.0	9.5	---	---	18.0	16.5	22.0	20.5	15.5	15.0
11	6.5	6.5	10.5	9.5	---	---	16.5	16.0	21.5	20.0	15.5	14.5
12	6.5	6.5	11.5	10.5	---	---	16.0	15.0	21.0	20.0	15.5	15.0
13	6.5	6.5	13.0	11.5	---	---	15.0	14.5	20.5	19.5	15.5	15.0
14	7.0	6.5	13.5	13.0	16.0	16.0	16.0	15.0	19.5	19.0	15.5	15.0
15	8.0	7.0	13.5	13.0	16.0	16.0	18.0	15.5	19.5	19.0	15.5	15.0
16	8.0	7.0	13.0	12.0	16.0	16.0	18.5	17.0	19.0	18.0	15.0	15.0
17	7.0	7.0	12.0	11.5	16.0	16.0	19.5	18.5	18.5	18.0	15.5	14.5
18	7.0	6.5	11.5	11.0	17.0	16.0	20.0	19.5	19.0	17.0	14.5	14.0
19	7.0	6.5	11.5	10.5	18.5	17.0	20.5	19.5	18.5	18.5	14.0	13.0
20	7.0	7.0	12.0	11.5	18.5	18.0	21.0	19.5	18.5	18.0	13.0	12.0
21	7.0	7.0	11.5	11.5	18.0	17.0	21.0	20.0	19.0	18.0	12.0	11.5
22	8.0	7.0	11.5	11.5	17.0	16.5	21.0	20.0	18.5	17.0	11.5	11.0
23	8.0	7.0	11.5	11.0	16.5	16.0	20.5	20.0	19.5	18.5	11.0	10.5
24	8.0	7.0	11.0	10.5	16.0	15.5	20.0	19.0	20.0	19.0	10.5	10.0
25	8.0	8.0	11.5	10.5	15.5	15.5	19.5	19.0	20.5	19.0	10.0	10.0
26	8.5	8.0	13.5	11.0	15.5	15.5	19.5	18.5	20.5	19.0	10.0	9.5
27	9.0	8.5	14.5	13.0	15.5	15.5	20.0	18.5	20.5	19.0	9.5	9.0
28	9.5	9.0	15.5	14.5	16.0	15.5	20.0	19.0	20.5	19.0	9.5	9.0
29	9.5	9.0	16.0	15.5	17.0	16.0	20.5	19.0	20.0	18.5	9.5	9.0
30	9.0	8.5	16.5	16.0	18.0	16.0	20.5	19.0	19.5	18.0	9.5	9.5
31	---	---	16.5	16.0	---	---	20.5	19.5	19.5	17.0	---	---
MONTH	9.5	6.5	16.5	8.0	---	---	21.0	14.5	22.0	17.0	19.0	9.0

12022250 CHEHALIS RIVER AT ADNA, WASH.

LOCATION.--Lat 46°37'42", 123°03'35", in SW¼NE¼ sec.9, T.13 N., R.3 W., Lewis County, at bridge on State Highway 6, at Adna, and at mile 81.1.

DRAINAGE AREA.--About 380 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT.									
04...	1110	--	--	--	--	--	--	--	--
26...	1130	--	5.9	1.5	4.8	1.2	34	28	1.0
NOV.									
02...	1210	1180	5.2	1.5	4.7	.7	24	20	4.8
29...	1145	4650	4.0	1.1	3.8	.5	18	15	3.3
DEC.									
06...	1105	3850	3.9	1.2	3.9	.5	18	15	2.3
20...	1135	2430	4.3	1.4	4.2	.8	22	18	4.0
JAN.									
03...	1135	1660	4.7	1.5	4.6	.6	24	20	4.0
17...	1145	2310	4.2	1.5	4.2	.4	24	20	3.7
FEB.									
01...	1245	1430	4.5	1.5	4.3	.9	23	19	5.0
14...	1130	3540	3.6	1.3	3.8	.3	18	15	3.3
MAR.									
06...	1130	13600	3.2	1.2	3.0	.7	17	14	4.4
20...	1120	1700	4.8	1.3	3.6	.3	26	21	3.1
APR.									
03...	1130	1210	4.6	1.4	4.8	1.2	25	21	5.3
17...	1130	1910	4.5	1.3	4.2	.6	23	19	3.5
MAY									
01...	1130	1170	4.5	1.5	4.1	.9	30	25	3.4
15...	1130	322	5.5	1.8	4.8	.5	34	28	2.6
JUNE									
05...	1145	238	5.9	2.1	5.3	.6	37	30	3.7
19...	1050	193	6.4	2.2	7.0	2.4	33	27	7.4
JULY									
05...	1105	117	7.4	2.4	7.4	3.2	40	33	4.3
17...	1200	198	7.0	2.2	6.8	1.3	38	31	6.8
31...	1150	47	7.9	2.4	6.5	.6	40	33	3.4
AUG.									
14...	1135	45	7.8	2.8	7.3	.6	45	37	4.7
SEP.									
05...	1210	25	8.3	3.1	7.7	.7	47	39	8.0
18...	1145	38	8.1	2.6	7.1	.9	42	34	4.0

12022250 CHEHALIS RIVER AT ADNA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
04...	--	.14	.000	.09	.14	.010	.040	--	--
26...	6.4	.08	.010	.02	.26	.000	.020	61	21
NOV.									
02...	5.7	.16	.000	.12	.29	.010	.10	79	19
29...	5.1	1.9	.000	.25	.74	.010	.070	69	15
DEC.									
06...	3.9	.22	.000	.05	.50	.010	.040	64	15
20...	4.0	.33	.000	.03	.52	.010	.020	54	16
JAN.									
03...	5.1	.19	.010	.08	.40	.000	.010	54	18
17...	3.7	.21	.000	.02	.65	.010	.040	50	17
FEB.									
01...	4.2	.35	.000	.09	.59	.010	.030	68	17
14...	4.4	.22	.000	.10	.75	.010	.080	51	14
MAR.									
06...	3.9	.72	.000	.69	.63	.010	.33	59	13
20...	3.7	.11	.000	.06	.31	.010	.020	59	17
APR.									
03...	3.8	.45	.000	.12	.34	.010	.050	67	17
17...	3.1	.27	.010	.14	.25	.010	.030	63	17
MAY									
01...	3.7	.49	.010	.12	.21	.010	.020	75	17
15...	4.1	.14	.000	.01	.07	.000	.010	70	21
JUNE									
05...	4.1	.50	.010	.13	.03	.010	.020	66	23
19...	7.1	.25	.000	.20	.04	.010	.020	86	25
JULY									
05...	6.1	.56	.010	.12	.06	.010	.030	77	28
17...	6.0	.14	.000	.04	.08	.010	.020	69	27
31...	6.0	.14	.010	.02	.06	.010	.020	98	30
AUG.									
14...	6.5	.32	.000	.05	.06	.000	.040	87	31
SEP.									
05...	7.9	.34	.000	.08	.05	.010	.030	80	33
18...	7.5	.68	.000	.18	.04	.010	.040	68	31

12022250 CHEHALIS RIVER AT ADNA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
04...	--	82	7.2	12.9	93	10	9.2	600
26...	0	72	7.0	8.0	75	2	11.4	500
NOV.								
02...	0	64	7.0	6.7	96	8	11.7	900
29...	0	53	7.2	8.3	68	20	11.0	1500
DEC.								
06...	0	55	7.2	7.3	79	10	11.7	100
20...	0	59	6.9	.0	38	9	11.8	400
JAN.								
03...	0	60	7.2	3.7	40	4	12.9	320
17...	0	57	6.8	5.5	29	8	11.9	300
FEB.								
01...	0	61	7.1	2.4	32	7	13.3	350
14...	0	47	7.1	5.0	61	25	12.0	600
MAR.								
06...	0	40	6.6	6.3	100	90	12.0	1000
20...	0	56	7.0	8.4	32	6	11.3	250
APR.								
03...	0	62	6.9	8.4	33	8	11.6	200
17...	0	54	7.1	7.1	26	5	12.1	200
MAY								
01...	0	58	7.2	9.1	28	3	11.1	>100
15...	0	76	7.2	15.7	37	3	9.2	250
JUNE								
05...	0	85	7.3	17.9	28	2	8.9	--
19...	0	88	7.2	19.0	30	2	9.1	250
JULY								
05...	0	95	7.4	22.0	32	2	7.3	150
17...	0	86	7.4	22.4	36	2	7.5	900
31...	0	101	7.4	22.2	31	1	7.8	400
AUG.								
14...	0	106	7.3	19.4	24	1	7.9	660
SEP.								
05...	0	110	7.3	18.4	24	1	7.5	100
18...	0	103	7.4	15.2	43	3	8.8	1000

12027500 CHEHALIS RIVER NEAR GRAND MOUND, WASH.

LOCATION.--Lat 46°46'34", long 123°02'04", in NE¼NE¼ sec.22, T.15 N., R.3 W., Thurston County, temperature recorder at gaging station on left bank, at downstream side of highway bridge at Meadows, 1.5 miles southwest of Grand Mound, 7.0 miles downstream from Skookumchuck River, and at mile 59.9.

DRAINAGE AREA.--895 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1952 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 24.0°C Aug. 7, 8; minimum, 0.5°C Feb. 2-5.

Period of record:
Water temperatures: Maximum (1952-67, 1970-72), 26.5°C July 22, 23, 1959; minimum, freezing point several days during January and February 1957.

REMARKS.--Miscellaneous suspended sediment data published for water years 1962-64.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	10.5	6.0	6.0	8.0	8.0	4.0	[illegible]	1.0	1.0	6.0	5.0
2	11.0	10.5	6.5	6.0	8.0	8.0	4.0	4.0	1.0	0.5	5.0	5.0
3	11.5	11.0	6.5	6.5	8.0	6.5	4.0	4.0	0.5	0.5	5.0	5.0
4	12.0	11.5	7.0	6.5	6.5	6.0	4.0	3.5	0.5	0.5	5.0	5.0
5	13.0	12.0	7.0	6.5	6.0	6.0	3.5	3.5	1.0	0.5	6.5	5.0
6	13.0	13.0	6.5	5.5	6.5	6.0	4.0	3.5	1.0	1.0	6.5	6.5
7	13.5	13.0	5.5	5.0	6.5	5.5	4.5	4.0	3.0	1.0	6.5	6.0
8	13.5	13.5	6.0	5.5	5.5	5.0	4.5	4.5	3.5	3.0	6.5	6.5
9	13.5	13.5	6.0	6.0	5.0	5.0	4.5	4.5	3.5	3.5	6.5	6.5
10	14.5	13.5	6.5	6.0	5.0	5.0	5.0	4.5	3.5	3.5	7.0	6.5
11	14.5	14.5	8.0	6.5	5.0	4.5	5.5	5.0	4.0	3.5	7.0	7.0
12	14.5	14.0	8.5	8.0	4.5	4.5	5.5	5.5	4.0	4.0	8.0	7.0
13	14.0	14.0	8.5	8.5	4.5	4.5	5.5	5.0	4.5	4.0	8.0	8.0
14	14.0	13.5	8.5	8.5	5.0	4.5	5.0	5.0	4.5	4.5	8.5	8.0
15	13.5	13.0	8.5	8.5	5.0	5.0	5.5	5.0	4.5	4.5	8.5	8.5
16	13.0	12.0	8.5	8.5	5.0	5.0	5.5	5.5	5.0	4.5	9.0	8.5
17	12.0	11.0	8.5	8.0	5.5	5.0	5.5	5.5	5.0	5.0	9.5	9.0
18	11.5	[illegible]	8.0	7.0	5.5	5.5	5.5	5.0	5.5	5.0	9.5	9.5
19	11.0	11.0	7.0	7.0	5.5	5.5	5.5	5.0	6.0	5.5	9.5	9.5
20	11.0	[illegible]	8.0	7.0	5.5	5.0	6.5	5.5	6.0	6.0	9.5	9.5
21	10.0	[illegible]	[illegible]	8.0	5.5	4.5	6.5	6.5	6.0	5.5	9.5	9.0
22	9.5	[illegible]	[illegible]	8.0	4.5	4.5	6.5	6.5	5.5	5.5	9.0	9.0
23	9.5	[illegible]	8.5	7.0	5.0	4.5	6.5	6.0	5.5	5.5	9.0	8.5
24	9.5	9.0	8.0	8.0	5.0	5.0	6.0	5.0	5.5	5.5	8.5	8.5
25	9.5	9.0	8.0	8.0	5.0	5.0	5.0	4.0	5.5	5.5	9.0	8.0
26	9.0	8.5	8.0	8.0	5.0	5.0	4.0	3.5	5.5	5.5	8.0	7.0
27	8.5	8.0	8.0	8.0	5.0	4.0	3.5	3.0	6.5	5.5	8.0	7.0
28	8.0	6.5	8.0	8.0	4.0	4.0	---	---	6.5	6.5	8.0	8.0
29	6.5	6.0	8.0	8.0	4.0	3.5	---	---	6.5	6.0	8.5	8.0
30	6.5	5.5	8.0	8.0	4.0	3.5	---	---	---	---	9.0	8.0
31	6.0	6.0	---	---	4.0	4.0	---	---	---	---	9.0	8.5
MONTH	14.5	5.5	8.5	5.0	8.0	3.5	6.5	3.0	6.5	0.5	9.5	5.0

12027500 CHEHALIS RIVER NEAR GRAND MOUND, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	9.0	9.5	9.0	18.0	17.0	19.0	18.0	22.0	21.0	19.0	17.0
2	9.5	9.0	10.5	9.5	18.0	17.0	19.5	18.5	21.0	20.0	19.0	17.0
3	9.0	8.5	12.0	10.5	18.0	17.0	20.5	19.0	21.0	19.5	19.5	18.0
4	9.0	9.0	14.0	12.0	18.0	17.0	21.0	20.0	22.0	20.0	19.5	18.5
5	9.5	9.0	14.5	13.5	18.0	17.0	21.5	20.5	23.0	20.5	19.0	18.5
6	9.5	9.5	14.5	14.0	18.5	18.0	21.0	20.0	23.5	21.0	18.5	17.0
7	9.5	8.0	14.0	13.5	18.5	18.0	20.0	19.0	24.0	21.0	17.0	16.5
8	8.0	8.0	13.5	12.0	18.5	18.0	19.5	19.0	24.0	22.0	16.5	16.0
9	8.0	8.0	12.0	12.0	18.5	18.5	19.0	18.5	23.5	21.5	16.0	15.5
10	8.0	8.0	13.0	11.5	18.5	18.0	18.5	18.0	23.0	20.5	16.0	15.5
11	8.0	8.0	13.5	12.0	18.0	17.0	18.0	18.0	21.5	20.0	16.0	15.0
12	8.0	8.0	14.5	13.5	17.0	16.5	18.0	18.0	21.0	19.5	16.5	15.5
13	8.0	8.0	15.5	14.5	16.5	16.0	18.0	17.0	20.5	19.0	16.5	16.0
14	8.0	8.0	16.5	15.5	16.0	16.0	18.0	16.5	20.0	19.0	16.5	15.5
15	8.5	8.0	16.5	16.0	16.0	15.5	18.5	17.0	19.0	18.5	16.0	15.5
16	8.0	8.0	16.0	15.5	15.5	15.0	19.5	18.5	18.5	18.0	16.0	15.5
17	8.0	7.0	15.5	14.0	16.0	15.5	20.5	19.5	18.5	18.5	16.0	15.0
18	8.0	7.0	14.0	13.5	17.0	16.0	20.5	20.5	19.5	18.0	15.5	14.5
19	8.0	7.0	13.5	12.0	18.0	16.5	21.0	20.0	19.5	19.0	14.5	14.0
20	8.0	8.0	14.0	13.0	18.0	16.5	21.5	20.0	19.0	18.5	14.0	14.0
21	8.5	8.0	14.0	14.0	16.5	16.5	21.5	20.5	19.0	18.5	14.0	14.0
22	8.5	8.5	14.5	14.0	16.5	16.0	21.5	20.0	18.5	18.0	14.0	13.0
23	8.5	8.5	14.5	14.0	16.0	16.0	21.5	20.5	19.5	18.0	13.0	11.5
24	8.5	8.5	14.0	13.5	16.0	15.5	20.5	19.5	20.0	18.5	11.5	11.5
25	9.5	8.5	14.0	13.0	15.5	15.5	20.0	19.0	20.0	19.0	11.5	11.0
26	9.0	9.0	14.5	13.5	15.5	15.0	20.0	19.0	20.0	18.5	11.0	10.5
27	10.0	9.0	15.5	14.0	15.5	15.0	20.5	19.0	20.0	18.5	11.0	10.5
28	10.5	10.0	16.5	15.0	16.5	15.5	---	19.5	20.5	19.0	10.5	10.5
29	10.0	9.0	18.0	16.5	16.5	16.5	---	---	20.5	19.0	11.0	10.5
30	9.0	9.0	18.5	17.0	18.0	16.5	---	---	20.5	18.5	11.0	11.0
31	---	---	18.5	18.0	---	---	---	---	19.5	18.0	---	---
MONTH	10.5	7.0	18.5	9.0	18.5	15.0	21.5	16.5	24.0	18.0	19.5	10.5

12031000 CHEHALIS RIVER AT PORTER, WASH.

LOCATION.--Lat 46°56'17", long 123°18'45", on north line of NE¼ sec.28, T.17 N., R.5 W., Grays Harbor County, at gaging station at bridge on County Highway at mouth of Porter Creek, 0.1 mile west of Porter, and at mile 33.3.

DRAINAGE AREA.--1,294 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1972.
Water temperatures: July 1959 to September 1960, October 1961 to July 1972 (discontinued).
Sediment records: October 1961 to September 1971.

EXTREMES.--October 1971 to July 1972:
Water temperatures: Maximum, 23.5°C July 17; minimum, freezing point Jan. 26, 28.

Period of record:
Water temperatures: Maximum, 27.0°C June 17, 1969; minimum, freezing point Dec. 15, 17, 1967, Dec. 30, 1968, several days during January 1969, Jan. 26, 28, 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
04...	0930	705	7.5	2.3	5.3	1.5	37	30	5.3	5.9	.17
26...	0940	1830	6.4	2.0	4.6	1.1	30	25	5.3	7.0	--
NOV.											
02...	1045	3680	5.9	1.8	4.8	.9	31	25	4.0	5.4	--
29...	1000	9320	3.6	1.1	3.8	.6	21	17	3.0	3.7	.57
DEC.											
06...	0925	10800	4.3	1.2	3.9	.6	19	16	2.3	3.0	.39
20...	1000	8660	4.5	1.5	3.9	1.0	21	17	4.3	3.3	.39
JAN.											
03...	1010	5950	4.6	1.4	3.8	.7	23	19	3.8	3.7	--
17...	0945	8500	5.5	1.7	3.4	.8	20	16	3.0	3.1	.12
FEB.											
01...	1000	5670	4.7	1.7	3.9	.7	23	19	4.7	3.4	.35
14...	0945	13000	3.4	1.4	3.4	.3	20	16	3.3	3.4	.39
MAR.											
06...	0935	18300	3.0	1.0	3.0	.7	19	16	--	2.3	.74
20...	0935	5690	5.0	1.6	3.2	.5	28	23	2.8	3.4	.28
28...	0915	5760	--	--	--	--	--	--	--	--	.15
APR.											
03...	0940	4350	5.3	1.6	4.5	.9	29	24	3.4	3.2	.43
17...	0935	6600	4.5	1.4	3.9	.7	29	24	3.5	3.4	.20
MAY											
01...	0935	4170	4.7	1.7	3.9	.6	29	24	3.7	2.9	.36
15...	1005	1770	6.3	2.1	4.7	.6	37	30	2.8	4.7	.18
JUNE											
05...	1000	905	7.3	2.3	5.1	.6	38	31	2.9	3.3	.18
19...	0925	750	8.2	2.6	5.7	.6	35	29	7.3	5.4	1.5
JULY											
05...	0945	562	8.1	2.5	5.8	.6	42	34	4.3	5.2	.54
17...	1005	685	7.6	2.6	5.6	.7	38	31	6.7	5.0	.20
31...	0940	450	7.7	2.7	6.1	.7	41	34	3.1	5.0	.22
AUG.											
14...	0955	350	8.0	2.7	6.0	.6	43	35	4.5	4.9	.33
SEP.											
05...	1025	360	8.0	2.6	6.9	1.0	41	34	3.2	6.3	.18
18...	1015	480	7.9	2.6	6.0	.9	44	36	3.7	5.4	.50

12031000 CHEHALIS RIVER AT PORTER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
04...	.010	.07	.08	.010	.020	28	0	86	7.3	13.5
26...	.010	.03	.49	.010	.040	24	0	74	6.9	9.0
NOV.										
02...	.010	.10	.42	.020	.050	22	0	71	7.1	6.3
29...	.000	.18	.70	.020	.080	14	0	44	7.2	8.0
DEC.										
06...	.010	.16	.49	.010	.090	16	0	54	7.3	5.9
20...	.010	.04	.60	.000	.010	17	0	54	7.1	5.8
JAN.										
03...	.000	.12	.49	.010	.020	17	0	57	7.2	3.8
17...	.000	.04	.65	.010	.040	21	4	52	6.7	5.5
FEB.										
01...	.010	.16	.65	.000	.040	19	0	60	7.3	2.2
14...	.010	.27	.91	.010	.14	14	0	46	7.3	5.6
MAR.										
06...	.010	.25	.66	.010	.11	12	0	41	6.6	6.7
20...	.000	.14	.44	.010	.050	19	0	60	6.9	8.7
28...	.000	.06	.43	.010	.040	--	--	--	--	--
APR.										
03...	.010	.13	.47	.020	.030	20	0	62	6.9	8.7
17...	.010	.12	.36	.010	.030	17	0	55	7.0	7.4
MAY										
01...	.010	.10	.34	.010	.040	18	0	60	7.1	9.5
15...	.010	.04	.27	.010	.020	24	0	81	7.2	15.5
JUNE										
05...	.010	.04	.20	.000	.030	28	0	90	7.4	16.9
19...	.010	.39	.26	.020	.050	31	2	114	6.9	18.1
JULY										
05...	.010	.09	.20	.020	.050	31	0	94	7.5	21.0
17...	.010	.06	.24	.030	.040	30	0	94	7.4	21.0
31...	.020	.05	.03	.020	.040	30	0	99	7.5	21.0
AUG.										
14...	.010	.05	.11	.010	.040	31	0	104	7.3	17.8
SEP.										
05...	.010	.07	.15	.030	.030	31	0	94	7.4	18.4
18...	.010	.16	.24	.020	.040	30	0	102	7.3	15.0

12031000 CHEHALIS RIVER AT PORTER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
04...	58	10	9.3	200	--	--	--	--	--	--
26...	120	6	10.6	1200	0	--	12	340	2.2	40
NOV.										
02...	94	9	11.4	5600	7	--	200	280	1900	30
29...	76	15	10.6	4000	--	--	--	--	--	--
DEC.										
06...	128	30	11.3	4000	3	--	5	1	.4	20
20...	42	6	11.4	1000	0	--	3	2	2.2	60
JAN.										
03...	46	5	12.4	350	6	--	1	1	.4	120
17...	38	8	11.4	600	--	0	2	1	.3	8
FEB.										
01...	51	10	12.8	1300	--	0	3	1	.4	20
14...	117	45	11.5	2500	--	0	11	23	.1	20
MAR.										
06...	74	40	11.5	1300	--	0	8	4	.6	0
20...	53	15	10.3	500	--	0	3	4	.2	30
28...	--	--	--	--	--	--	--	--	--	--
APR.										
03...	54	8	10.8	350	--	0	1	0	.1	0
17...	39	8	11.3	300	--	1	8	92	.7	20
MAY										
01...	43	6	10.5	300	--	0	2	1	.0	8
15...	29	3	9.1	350	--	1	2	5	.2	70
JUNE										
05...	18	1	9.2	750	--	0	1	8	1.6	8
19...	20	3	8.8	350	--	0	9	1	.4	20
JULY										
05...	32	1	7.7	300	--	0	3	1	1.3	10
17...	26	1	8.1	700	--	0	2	1	.1	0
31...	26	1	8.0	80	--	0	2	2	.2	0
AUG.										
14...	22	1	8.0	600	--	0	1	2	.1	0
SEP.										
05...	17	1	7.6	400	--	0	4	1	.7	0
18...	25	2	8.8	800	--	0	460	5	.4	340

12031000 CHEHALIS RIVER AT PORTER, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1971 TO JULY 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	6.5	7.0	4.0	3.0	5.0	10.0	11.0	18.5	21.0	---	---
2	13.5	7.0	6.5	5.0	1.5	5.5	8.5	13.[illegible]	19.0	20.5	---	---
3	13.0	8.0	6.0	4.0	1.0	6.0	11.0	14.5	19.0	22.0	---	---
4	13.5	8.5	4.5	3.5	0.5	5.5	10.0	16.0	20.0	21.0	---	---
5	18.5	6.5	6.5	4.5	2.0	7.0	10.0	15.5	20.0	23.0	---	---
6	15.0	6.5	6.5	5.5	3.5	7.0	8.5	13.0	20.5	21.0	---	---
7	17.0	7.0	4.5	5.0	5.0	7.0	9.0	13.0	20.0	19.5	---	---
8	13.5	7.0	4.5	5.0	6.5	8.0	7.0	13.0	20.5	19.0	---	---
9	16.0	8.0	5.0	5.0	5.5	8.0	8.0	13.0	18.0	18.0	---	---
10	14.5	8.5	5.0	4.0	6.5	8.5	7.0	14.5	18.0	18.0	---	---
11	16.0	9.5	4.5	5.5	5.5	9.0	8.0	15.0	18.0	18.0	---	---
12	13.5	10.0	4.0	5.0	6.5	9.5	6.5	18.5	16.0	16.5	---	---
13	15.0	8.5	4.5	4.5	5.5	9.5	8.5	18.5	19.0	16.5	---	---
14	12.0	9.0	5.0	4.5	5.5	10.0	9.0	16.0	18.0	19.5	---	---
15	13.5	8.5	5.0	5.5	6.5	10.0	9.5	15.0	16.5	21.0	---	---
16	9.5	8.5	6.0	5.5	6.5	11.5	7.0	16.0	17.0	19.5	---	---
17	10.5	7.0	6.5	4.5	5.5	10.5	9.0	13.5	15.5	23.5	---	---
18	10.0	8.0	6.0	4.5	8.0	10.5	9.0	15.0	16.5	21.5	---	---
19	10.5	8.5	5.5	8.5	7.0	10.0	9.0	16.5	18.0	21.5	---	---
20	10.5	8.5	5.0	8.0	7.0	8.5	9.0	16.5	18.5	22.0	---	---
21	9.5	8.5	4.5	6.5	7.0	9.5	8.5	14.5	16.0	22.0	---	---
22	9.5	8.0	4.5	7.0	6.0	8.5	10.0	14.0	15.5	23.0	---	---
23	10.0	7.0	4.5	6.0	6.5	9.0	11.0	14.0	14.5	21.0	---	---
24	8.0	7.0	4.5	4.0	5.5	7.0	9.5	14.0	14.5	20.0	---	---
25	9.5	6.0	5.0	3.0	6.5	7.0	10.0	15.5	15.0	20.0	---	---
26	9.5	8.0	5.0	0.0	6.0	6.0	12.0	18.5	16.0	20.5	---	---
27	7.0	8.0	3.5	0.5	8.5	6.0	13.0	18.0	18.5	21.0	---	---
28	8.0	8.0	2.0	0.0	8.5	8.5	10.5	21.0	18.5	21.5	---	---
29	4.5	8.0	3.5	1.5	7.0	9.5	10.0	18.0	19.0	21.0	---	---
30	5.5	8.0	3.0	2.0	---	10.0	10.5	19.5	---	23.0	---	---
31	6.5	---	4.0	2.0	---	9.0	---	18.0	---	21.5	---	---
MONTH	11.5	8.0	5.0	4.5	5.5	8.5	9.5	15.5	17.5	20.5	---	---

12032500 CLOQUALLUM RIVER AT ELMA, WASH.

LOCATION.--Lat 47°00'17", long 123°23'11", in SW¼NW¼ sec.36, T.18 N., R.6 W., Grays Harbor County, at gaging station at State Highway 12 bridge, 1.7 miles east of Elma, 1.9 miles downstream from Wildcat Creek and at mile 1.9.

DRAINAGE AREA.--64.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1961 to September 1965, October 1971 to September 1972 (discontinued).
Water temperatures: May 1972 to September 1972.

EXTREMES.--May to September 1972:
Water temperatures: Maximum, 19.5°C Aug. 7, 8; minimum, 8.5°C Sept. 27.

REMARKS.--Recorder stopped Aug. 25 to Sept. 7; range in temperature 14.0°C to 18.5°C. Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
04...	0915	28	6.4	2.8	4.1	.6	38	31
26...	0925	205	5.5	2.0	4.1	.9	28	23
NOV.								
02...	1030	186	5.3	2.2	3.9	.9	26	21
29...	0925	854	3.7	1.5	3.0	.4	17	14
DEC.								
06...	0850	690	4.3	1.5	3.1	.4	19	16
20...	0930	625	4.1	1.8	3.2	.8	20	16
JAN.								
03...	0935	225	4.9	2.0	3.5	.7	25	21
17...	0915	490	3.2	1.1	3.4	.5	20	16
FEB.								
01...	0915	324	4.4	1.9	3.3	.8	25	21
14...	0915	642	3.7	1.5	2.9	.1	19	16
MAR.								
06...	0915	3050	2.2	1.0	2.3	.6	12	10
20...	0855	430	3.9	1.4	2.6	.3	25	21
APR.								
03...	0915	272	4.9	1.7	3.1	.6	28	23
17...	0915	385	4.4	1.7	3.2	.6	24	20
MAY								
01...	0915	204	4.6	1.9	3.2	.5	29	24
15...	0930	120	4.9	2.2	3.4	.4	33	27
JUNE								
05...	0930	66	6.3	2.4	4.0	.6	32	26
19...	0905	56	6.1	2.5	4.0	1.6	29	24
JULY								
05...	0920	38	5.9	2.4	4.4	.9	35	29
17...	0925	68	6.3	2.5	4.3	1.1	35	29
31...	0915	38	6.2	2.5	4.0	.4	34	28
AUG.								
14...	0920	33	6.0	2.6	4.1	.4	35	29
SEP.								
05...	0955	25	6.3	2.7	4.7	.9	36	30
18...	0950	28	6.6	2.4	4.5	.9	38	31

12032500 CLOQUALLUM RIVER AT ELMA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
04...	5.3	3.1	.11	.010	.05	.19	.000	.030	27
26...	4.5	4.2	.16	.020	.07	.57	.010	.040	22
NOV.									
02...	4.0	4.4	.21	.010	.14	.98	.020	.040	22
29...	4.0	3.1	.25	.000	.09	.95	.010	.040	15
DEC.									
06...	3.5	2.8	.31	.000	.03	.79	.000	.010	17
20...	3.3	2.9	.43	.010	.08	.61	.000	.010	18
JAN.									
03...	3.2	3.5	.21	.000	.09	.64	.010	.010	20
17...	2.5	2.8	.12	.000	.06	.57	.020	.020	13
FEB.									
01...	3.0	3.3	.34	.000	.08	.63	.020	.020	19
14...	2.3	3.9	.12	.000	.05	.80	.010	.020	15
MAR.									
06...	2.6	2.4	.33	.010	.32	.64	.000	.12	10
20...	2.2	2.8	.13	.000	.06	.41	.010	.020	15
APR.									
03...	3.1	3.1	.30	.000	.09	.45	.10	.020	19
17...	2.7	2.6	.12	.010	.12	.45	.010	.040	18
MAY									
01...	2.9	3.1	.62	.010	.14	.35	.010	.040	19
15...	2.2	2.9	.21	.010	.01	.28	.000	.010	21
JUNE									
05...	2.8	2.7	.65	.010	.13	.27	.000	.030	26
19...	7.3	3.3	.75	.010	.14	.30	.010	.030	26
JULY									
05...	4.1	3.6	.78	.020	.17	.45	.020	.030	25
17...	7.1	4.0	.56	.010	.08	.20	.020	.040	26
31...	3.9	4.0	.24	.020	.07	.31	.020	.040	26
AUG.									
14...	4.8	3.5	.17	.010	.02	.26	.010	.020	26
SEP.									
05...	5.4	3.8	.11	.010	.04	.27	--	--	27
18...	4.4	3.5	.18	.010	.10	.24	.010	.28	26

12032500 CLOQUALLUM RIVER AT ELMA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
04...	0	86	7.4	12.4	42	4	9.2	600
26...	0	70	7.0	8.7	52	3	10.5	1600
NOV.								
02...	1	66	7.1	7.3	71	5	11.1	300
29...	1	43	7.1	8.3	51	10	10.7	1000
DEC.								
06...	1	53	7.5	6.1	58	6	11.6	900
20...	1	56	6.7	6.2	37	4	11.4	600
JAN.								
03...	0	56	7.4	2.2	26	1	12.6	440
17...	0	50	6.8	5.6	30	4	11.6	900
FEB.								
01...	0	61	7.5	1.9	36	3	13.1	1200
14...	0	50	7.2	4.8	32	5	11.7	700
MAR.								
06...	0	35	6.7	5.7	63	45	12.5	500
20...	0	49	6.8	7.3	31	4	11.3	500
APR.								
03...	0	55	7.2	7.1	28	2	11.8	300
17...	0	50	7.0	5.8	23	3	12.0	600
MAY								
01...	0	58	7.2	7.6	22	2	11.1	350
15...	0	72	7.2	12.2	30	3	9.9	700
JUNE								
05...	0	74	7.4	12.4	23	2	10.1	700
19...	2	118	6.9	14.4	20	2	9.8	700
JULY								
05...	0	86	7.2	15.0	25	2	8.8	700
17...	0	74	7.3	15.0	28	1	9.0	1200
31...	0	80	7.4	15.1	26	1	9.3	800
AUG.								
14...	0	86	7.1	13.1	25	1	9.4	740
SEP.								
05...	0	79	7.5	14.4	27	1	8.8	800
18...	0	82	7.4	11.6	30	3	10.2	1100

TEMPERATURE (°C) OF WATER, MAY TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	14.5	11.5	16.5	13.0	16.5	15.5	---	---
2	---	---	---	---	15.5	11.0	17.0	13.5	15.5	15.0	---	---
3	---	---	---	---	15.0	12.0	18.5	14.5	18.0	14.5	---	---
4	---	---	---	---	15.0	12.0	19.0	14.5	18.0	15.5	---	---
5	---	---	---	---	15.5	12.0	18.5	15.5	18.5	16.0	---	---
6	---	---	---	---	16.0	13.0	16.5	15.0	19.0	15.5	---	---
7	---	---	---	---	15.5	13.0	15.0	13.5	19.5	16.5	15.0	---
8	---	---	---	---	16.0	13.0	15.0	13.5	19.5	17.0	14.5	13.5
9	---	---	---	---	15.5	13.0	14.5	13.5	18.5	17.0	14.0	13.0
10	---	---	---	---	15.0	13.0	14.0	12.0	18.5	16.0	14.0	12.0
11	---	---	---	---	14.0	12.0	13.5	13.0	17.0	15.0	14.5	11.5
12	---	---	---	---	14.0	12.0	14.0	13.5	16.5	14.5	15.0	13.0
13	---	---	---	---	14.5	12.0	14.0	13.5	17.0	15.0	15.0	13.0
14	---	---	---	---	14.5	13.0	16.0	13.5	16.0	15.0	15.0	12.0
15	---	---	---	---	14.0	13.5	16.5	13.5	16.0	15.0	15.0	13.5
16	---	---	13.0	---	14.0	11.5	18.0	14.0	16.5	14.5	14.5	14.0
17	---	---	11.5	10.5	15.5	11.5	18.5	14.5	16.0	15.5	14.5	12.0
18	---	---	11.5	10.0	16.0	13.0	18.0	15.5	17.0	14.5	13.5	12.0
19	---	---	14.5	9.0	17.0	13.5	18.0	14.5	16.5	15.5	13.0	11.5
20	---	---	14.5	10.0	16.0	14.0	18.0	14.5	16.5	15.5	12.0	11.5
21	---	---	12.0	11.0	14.5	13.5	17.0	15.0	16.5	15.0	12.0	11.5
22	---	---	12.0	10.5	13.5	13.0	18.0	15.5	17.0	15.0	12.0	11.0
23	---	---	12.0	10.0	13.5	12.0	17.0	15.5	18.0	15.5	11.0	10.5
24	---	---	11.5	9.0	13.5	12.0	15.5	14.5	18.0	15.5	11.0	10.0
25	---	---	13.5	9.0	13.5	13.0	16.0	13.5	---	16.0	11.0	9.5
26	---	---	15.0	10.0	14.0	12.0	15.5	14.0	---	---	10.5	9.5
27	---	---	16.0	11.5	15.5	13.0	16.5	13.5	---	---	10.5	8.5
28	---	---	17.0	13.5	15.5	13.0	18.0	14.0	---	---	10.0	9.5
29	---	---	16.0	14.0	15.5	14.0	18.0	15.0	---	---	12.0	10.0
30	---	---	16.5	13.0	16.5	13.0	18.5	15.0	---	---	12.0	9.5
31	---	---	14.5	12.0	---	---	18.5	16.0	---	---	---	---
MONTH	---	---	---	---	17.0	11.0	19.0	12.0	---	14.5	15.0	---

12034500 MIDDLE FORK SATSOP RIVER NEAR SATSOP, WASH.

LOCATION.--Lat 47°06'42", long 123°30'15", in NW¼NW¼ sec.25, T.19 N., R.7 W., Grays Harbor County, 0.2 mile downstream from Smith Creek, 3.3 miles upstream from former gaging station, 7.5 miles north of Satsop, and at mile 3.7.

DRAINAGE AREA.--56.7 sq mi.

PERIOD OF RECORD.--Water temperatures: June 1972 to September 1972.

EXTREMES.--June to September 1972:
Water temperatures: Maximum, 22.0°C Aug. 7; minimum, 8.0°C Sept. 27.

REMARKS.--Recorder stopped June 29 to July 21; range in temperature 10.5°C to 21.5°C.

TEMPERATURE (°C) OF WATER, JUNE TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	17.0	12.0	---	---	16.0	15.0	18.5	14.0
2	---	---	---	---	18.0	12.0	---	---	16.0	14.5	19.0	14.0
3	---	---	---	---	17.0	13.0	---	---	19.5	14.5	19.0	14.5
4	---	---	---	---	16.5	13.5	---	---	20.0	15.5	17.0	15.5
5	---	---	---	---	18.0	13.0	---	---	21.0	16.0	16.5	15.0
6	---	---	---	---	18.5	14.0	---	---	21.5	16.0	15.0	14.0
7	---	---	---	---	18.0	14.0	---	---	22.0	17.0	15.5	14.0
8	---	---	---	---	18.0	13.5	---	---	21.5	18.0	15.0	14.0
9	---	---	---	---	16.5	14.0	---	---	20.5	17.0	15.5	13.0
10	---	---	---	---	16.0	13.0	---	---	20.5	16.0	15.0	12.0
11	---	---	---	---	15.0	12.0	---	---	19.0	15.0	15.5	12.0
12	---	---	---	---	14.0	12.0	---	---	18.5	14.5	16.0	13.0
13	---	---	---	---	16.0	12.0	---	---	19.0	15.0	16.5	13.0
14	---	---	---	---	14.0	13.5	---	---	16.5	14.5	16.5	13.0
15	---	---	---	---	15.0	13.0	---	---	16.0	14.5	16.5	13.5
16	---	---	---	---	16.5	12.0	---	---	18.0	14.5	15.5	14.0
17	---	---	---	---	16.5	13.0	---	---	16.5	15.5	15.5	13.0
18	---	---	---	---	19.0	13.0	---	---	18.5	14.5	14.5	12.0
19	---	---	---	---	19.5	14.0	---	---	18.0	15.0	13.5	11.0
20	---	---	---	---	17.0	14.5	---	---	17.0	15.0	12.0	11.5
21	---	---	---	---	15.5	14.0	18.5	---	16.5	14.5	11.5	10.5
22	---	---	---	---	14.0	13.0	19.0	14.5	18.5	14.5	10.5	9.5
23	---	---	---	---	13.5	12.0	16.5	14.5	19.5	15.0	10.0	9.0
24	---	---	---	---	14.5	12.0	16.0	14.0	19.5	15.5	10.5	9.0
25	---	---	---	---	14.0	13.0	17.0	13.0	20.5	16.0	10.0	8.5
26	---	---	---	---	14.0	12.0	17.0	14.0	20.5	15.5	10.5	9.0
27	---	---	---	---	18.5	13.0	18.5	13.0	20.5	15.5	10.0	8.0
28	---	---	---	---	19.0	14.0	20.0	14.0	20.5	16.0	9.5	8.5
29	---	---	---	---	---	14.5	20.0	15.0	19.5	15.5	12.0	9.0
30	---	---	---	---	---	---	20.5	15.5	19.0	14.5	12.0	9.5
31	---	---	15.5	---	---	---	18.0	16.0	18.5	14.0	---	---
MONTH	---	---	---	---	19.5	12.0	---	---	22.0	14.0	19.0	8.0

12037400 WYNOOCHEE RIVER ABOVE BLACK CREEK NEAR MONTESANO, WASH.

LOCATION.--Lat 47°00'42", long 123°39'35", in SE¼SE¼ sec.27, T.18 N., R.8 W., Grays Harbor County, temperature recorder at gaging station on left bank, 2,000 ft upstream from Black Creek and 3.5 miles northwest of Montesano, and at mile 5.9.

DRAINAGE AREA.--155 sq mi.

PERIOD OF RECORD.--Water temperature: October 1969 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 21.0°C Aug. 7; minimum, 3.0°C Jan. 28.

Period of record:
Water temperatures: Maximum, 24.0°C Aug. 10, 1971; minimum, 3.0°C Jan. 15, 1971, Jan. 28, 1972.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	11.5	8.5	8.0	8.0	7.0	5.5	5.5	4.5	3.5	6.0	5.0
2	13.5	12.0	8.5	8.5	8.0	7.0	5.5	5.0	3.5	3.5	5.5	5.0
3	13.5	13.0	8.5	8.5	7.0	6.5	5.0	4.5	3.5	3.5	5.5	5.5
4	14.0	13.0	8.5	7.0	6.5	5.5	5.0	4.5	4.5	3.5	5.5	5.5
5	14.0	13.0	7.0	7.0	6.0	5.5	5.5	5.0	4.0	4.0	6.0	5.5
6	14.5	14.0	7.0	7.0	6.0	6.0	6.0	5.5	4.0	4.0	6.0	5.5
7	15.0	13.5	8.0	7.0	6.0	6.0	6.0	5.5	4.0	4.0	5.5	5.0
8	14.5	13.0	8.0	8.0	6.0	5.0	5.5	4.5	4.5	4.0	6.0	5.5
9	14.0	13.0	8.0	8.0	5.5	5.0	5.5	5.5	4.5	4.5	6.0	6.0
10	14.0	13.5	8.0	8.0	5.5	5.5	5.5	5.0	4.5	4.5	6.0	6.0
11	14.0	13.5	8.5	8.0	5.5	5.5	5.5	5.0	5.0	4.5	6.0	6.0
12	14.0	13.0	8.5	8.5	5.5	5.5	5.5	5.5	5.0	5.0	6.0	6.0
13	14.0	13.0	8.5	8.5	5.5	5.5	5.5	4.5	5.0	5.0	6.5	6.0
14	13.0	12.0	8.5	8.5	5.5	5.5	5.0	5.0	5.0	4.5	6.0	5.5
15	13.0	11.5	8.5	8.5	5.5	5.5	5.5	5.0	5.0	5.0	6.0	6.0
16	11.5	11.0	8.5	8.5	6.0	5.5	5.5	5.5	5.0	5.0	6.5	6.0
17	11.0	10.5	8.5	8.0	6.0	6.0	5.5	5.5	5.0	4.5	6.5	6.0
18	11.0	10.5	8.0	8.0	6.0	6.0	5.5	5.0	5.5	4.5	6.5	6.5
19	11.0	10.5	8.5	8.0	6.0	6.0	5.5	5.0	6.0	5.5	6.5	6.5
20	10.5	10.0	9.0	8.5	6.0	5.5	6.0	5.5	6.0	5.5	6.5	6.0
21	10.5	10.0	9.0	8.5	5.5	5.0	6.0	5.5	5.5	5.5	6.5	6.0
22	10.5	10.0	8.5	7.0	5.5	5.0	5.5	5.5	5.5	5.5	6.5	6.5
23	10.5	10.5	7.0	7.0	5.5	5.5	5.5	5.5	5.5	5.5	6.5	5.5
24	10.5	10.0	8.0	7.0	5.5	5.5	5.5	4.5	5.5	5.5	6.0	6.0
25	10.5	10.5	8.0	7.0	5.5	5.5	4.5	4.5	6.0	5.5	6.0	5.0
26	10.5	10.0	8.0	7.0	5.5	5.0	4.5	4.5	6.0	5.5	6.0	5.5
27	10.0	9.5	8.0	8.0	5.0	4.5	4.5	3.5	6.5	5.5	6.0	6.0
28	9.5	8.5	8.0	8.0	4.5	4.5	3.5	3.0	6.5	6.0	6.0	6.0
29	8.5	7.0	8.0	8.0	5.0	4.5	3.5	3.5	6.0	6.0	6.5	6.0
30	8.5	8.0	8.0	8.0	5.0	5.0	3.5	3.5	---	---	7.0	6.0
31	8.5	8.5	---	---	5.5	5.0	4.5	3.5	---	---	7.0	6.5
MONTH	15.0	7.0	9.0	7.0	8.0	4.5	6.0	3.0	6.5	3.5	7.0	5.0

12037400 WYNOOCHEE RIVER ABOVE BLACK CREEK NEAR MONTESANO, WASH.--Continued

TEMPERATURE (°C) OF WATER. WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	6.5	9.0	8.0	15.5	13.0	19.0	15.0	16.5	15.5	18.5	14.0
2	8.0	6.5	10.5	9.0	16.0	13.0	19.5	15.5	16.0	15.0	20.0	14.0
3	7.0	6.0	11.0	9.5	16.0	14.0	20.0	16.0	19.0	15.0	21.0	13.0
4	7.0	7.0	12.0	10.0	15.5	13.5	20.5	16.5	19.0	16.5	15.5	14.0
5	7.0	7.0	12.0	10.5	16.0	13.5	19.5	18.0	19.5	16.0	15.5	13.0
6	7.0	6.0	11.5	9.5	16.5	14.5	18.5	16.0	20.0	16.5	16.0	11.5
7	6.0	5.0	9.5	9.5	16.0	14.0	17.0	15.0	21.0	17.0	14.5	14.0
8	5.5	5.0	10.5	9.5	16.0	14.0	16.0	15.0	20.5	18.5	14.0	13.5
9	5.5	5.0	10.0	9.5	15.0	14.0	17.0	14.5	19.0	17.0	15.0	13.0
10	5.5	5.0	11.5	9.5	15.5	13.5	15.5	14.5	19.0	16.0	15.0	13.0
11	5.5	5.0	13.0	10.5	14.5	13.5	14.5	14.5	18.0	15.0	15.5	12.0
12	5.5	5.0	14.5	11.5	14.0	13.5	14.5	14.0	18.0	14.5	15.5	13.0
13	6.0	5.5	15.0	13.0	15.0	13.0	14.0	13.5	18.0	14.5	16.0	13.5
14	6.5	6.0	14.5	13.0	15.0	14.0	15.5	13.5	16.0	15.0	16.0	13.5
15	7.0	6.5	13.5	11.5	14.5	13.5	18.0	14.5	16.5	15.0	15.0	13.5
16	6.5	6.0	12.0	11.0	15.0	13.5	19.0	15.5	18.0	15.0	14.5	13.5
17	7.0	5.5	11.5	10.5	15.5	13.5	20.0	16.5	16.0	15.5	15.5	12.0
18	7.0	6.0	11.0	10.5	18.0	14.0	18.5	16.5	18.0	15.0	14.0	12.0
19	7.0	6.5	13.5	10.5	18.5	15.5	19.0	15.5	16.5	15.5	13.0	11.5
20	7.0	7.0	13.5	11.5	17.0	15.5	19.0	16.0	16.0	15.0	12.0	11.5
21	8.0	7.0	12.0	11.0	16.0	14.5	19.0	16.0	15.5	15.0	11.5	11.5
22	8.0	6.0	11.5	11.0	14.5	14.0	19.0	16.0	17.0	15.0	11.5	10.5
23	8.0	7.0	11.5	10.5	14.5	13.5	18.0	16.0	18.5	15.5	10.5	9.5
24	8.0	7.0	11.0	10.5	14.5	13.5	16.5	15.5	19.0	15.5	10.5	10.0
25	8.0	6.5	13.5	10.5	15.0	14.0	17.0	15.0	19.5	16.0	10.5	9.5
26	8.5	7.0	15.0	11.5	14.5	13.5	18.0	15.0	19.5	16.0	10.5	9.5
27	10.0	8.0	15.5	13.0	16.0	13.5	18.5	15.0	20.0	16.0	10.5	9.5
28	10.0	8.5	16.5	14.0	16.5	14.5	19.0	15.5	19.5	16.0	10.5	10.0
29	8.5	7.0	16.0	14.5	18.0	15.5	19.5	16.0	19.0	15.5	11.5	10.0
30	8.5	8.0	16.0	14.0	18.5	14.5	20.0	16.5	18.0	14.5	11.5	10.5
31	---	---	14.5	13.5	---	---	19.0	16.5	18.5	14.0	---	---
MONTH	10.0	5.0	16.5	8.0	18.5	13.0	20.5	13.5	21.0	14.0	21.0	9.5

12039003 HUMPTULIPS RIVER AT HUMPTULIPS, WASH.

LOCATION.--Lat 47°13'48", long 123°57'38", in SE¼SE¼ sec.7, T.20 N., R.10 W., Grays Harbor County, at U.S. Highway 101 bridge at Humptulips, 1.2 miles downstream from gaging station and at mile 23.6.

DRAINAGE AREA.--About 132 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1961, November 1961 to September 1970 (partial-record station), October 1971 to September 1972.
Water temperature: November 1969 to October 1970.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	1345	1830	5.4	1.1	2.5	.1	25	21	2.3	--	.000	.01
DEC.												
14...	1415	3160	4.0	1.0	2.6	.0	20	16	2.6	.04	.000	.03
FEB.												
08...	1440	2830	4.3	1.0	2.3	.1	19	16	2.6	.20	.000	.16
APR.												
11...	1445	1690	4.6	1.2	2.7	.3	25	21	2.6	.08	.000	.07
JUNE												
13...	1445	322	6.6	1.5	2.6	.2	34	28	2.2	.19	.000	.07
AUG.												
08...	1430	243	6.7	1.5	3.2	.2	32	26	1.5	.14	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	.25	.000	.010	18	0	53	7.4	7.1	14	5	11.8	120
DEC.												
14...	.24	.000	.020	14	0	46	7.2	5.5	42	7	12.4	200
FEB.												
08...	.09	.010	.050	15	0	43	7.3	5.8	47	20	12.8	120
APR.												
11...	.13	.000	.030	16	0	46	7.3	6.3	10	4	12.2	160
JUNE												
13...	.04	.000	.000	23	0	65	7.4	15.1	8	1	10.8	90
AUG.												
08...	.02	.000	.010	23	0	80	7.2	21.6	6	1	9.0	220

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.

LOCATION.--Lat 47°35'46", long 123°37'23", in SW¼ sec.6, T.24 N., R.7 W., Jefferson County, Olympic National Park, on right bank at gaging station, 15.5 miles northeast of Amanda Park, and at mile 5.2.

DRAINAGE AREA.--74.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1965 to September 1972.
Water temperatures: March 1965 to September 1972.
Sediment records: April 1965 to September 1972 (partial-record station).

EXTREMES.--1971-72:
Water temperatures: Maximum, 11.5°C Aug. 8; minimum, 1.5°C Dec. 8, Jan. 8, 10, 11, 27-30, Feb. 1, 2.

Period of record:
Water temperatures: Maximum, 14.5°C Aug. 7, 16-18, 1965; minimum, 1.0°C Jan. 31, 1968, sometime during period Dec. 16, 1970 to Jan. 20, 1971, Mar. 1, 2, 1971.

REMARKS.--Recorder stopped Mar. 5-14; range in temperature, 3.5°C to 4.5°C.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.									
27...	1230	679	5.7	12	.5	2.0	.1	37	30
DEC.									
22...	1200	536	5.1	13	.7	1.5	.0	37	30
MAR.									
15...	1120	1880	--	8.9	.4	.9	.1	28	23
MAY									
19...	1140	986	4.2	9.3	.5	1.0	.0	26	21
JULY									
26...	0930	802	4.3	9.9	.4	1.0	.1	26	21
SEP.									
26...	0940	410	6.8	12	.4	1.5	.1	34	28

DATE	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT.									
27...	8.8	.7	.1	--	.05	.05	--	71	48
DEC.									
22...	9.7	1.0	.0	--	--	.04	.010	50	49
MAR.									
15...	--	.7	--	--	--	--	--	--	--
MAY									
19...	7.6	.7	.0	--	--	.07	.040	47	36
JULY									
26...	7.8	1.0	.2	.020	.02	.04	.060	33	37
SEP.									
26...	11	.9	.4	--	--	.02	.020	59	50

DATE	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.									
27...	32	2	75	7.7	4.2	0	13.0	.0	7
DEC.									
22...	35	5	82	7.2	2.3	0	13.7	.2	2
MAR.									
15...	24	1	57	7.6	.4	--	14.1	.4	2
MAY									
19...	25	4	64	7.7	5.4	5	12.5	.0	3
JULY									
26...	26	5	62	8.0	7.5	0	11.9	.1	0
SEP.									
26...	32	4	78	7.4	5.7	0	12.6	.6	13

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.5	5.5	5.0	5.0	4.5	4.5	3.5	3.5	2.0	1.5	3.0	3.0
2	6.5	5.5	5.0	5.0	4.5	4.5	3.5	3.5	2.0	1.5	3.5	3.0
3	6.0	6.0	5.0	5.0	4.5	4.0	3.5	3.0	2.0	2.0	3.5	3.5
4	6.0	5.5	5.0	4.5	4.0	3.0	3.0	3.0	3.0	2.0	3.5	3.5
5	6.0	5.5	4.5	4.5	3.5	3.5	3.5	3.0	3.0	2.0	---	---
6	6.0	6.0	4.5	4.5	3.5	3.5	3.5	3.5	3.0	3.0	---	---
7	6.0	5.5	5.0	4.5	3.5	3.5	3.5	2.0	3.0	3.0	---	---
8	5.5	4.5	5.0	5.0	3.5	1.5	2.0	1.5	3.0	3.0	---	---
9	5.5	4.5	5.0	5.0	2.0	2.0	2.0	2.0	3.0	3.0	---	---
10	5.5	5.5	5.0	5.0	3.0	2.0	2.0	1.5	3.5	3.0	---	---
11	5.5	5.5	5.0	5.0	3.0	2.0	2.0	1.5	3.5	3.5	---	---
12	6.0	5.5	5.0	5.0	3.0	3.0	3.0	2.0	3.5	3.0	---	---
13	6.0	5.5	5.0	5.0	3.0	2.0	3.0	2.0	3.5	3.0	---	---
14	5.5	5.0	5.5	5.0	2.0	2.0	3.5	2.0	3.5	3.0	---	---
15	5.0	4.5	5.5	5.5	2.0	2.0	3.5	3.5	3.5	3.5	4.0	4.0
16	4.5	4.0	5.5	5.5	2.0	2.0	3.5	3.5	3.5	3.0	4.5	4.0
17	4.0	4.0	5.5	5.5	2.0	2.0	3.5	3.0	3.5	3.5	4.5	4.0
18	4.5	4.0	5.5	5.5	2.0	2.0	3.0	3.0	3.5	3.5	4.5	4.5
19	4.5	4.5	5.5	5.5	3.0	2.0	3.0	2.0	3.5	3.5	4.5	4.5
20	4.5	4.5	5.5	5.5	3.0	2.0	3.0	2.0	3.5	3.5	4.5	4.5
21	5.0	4.5	6.0	5.5	2.0	2.0	3.0	2.0	3.5	3.5	4.5	4.5
22	5.5	5.0	5.5	5.0	3.0	2.0	3.5	3.0	3.5	3.5	4.5	4.5
23	5.5	5.5	5.0	5.0	3.0	2.0	3.5	3.5	3.5	3.5	4.5	4.0
24	5.5	5.5	5.0	5.0	3.0	2.0	3.5	3.0	3.5	3.5	4.5	4.0
25	5.5	5.5	5.0	4.5	3.5	3.0	3.0	2.0	3.5	3.5	4.0	3.5
26	5.5	5.0	4.5	4.5	3.5	3.5	2.0	2.0	3.5	3.5	4.0	3.5
27	5.0	4.5	4.5	4.5	3.5	3.0	2.0	1.5	3.5	3.0	4.5	4.0
28	4.5	4.0	5.0	4.5	3.0	3.0	1.5	1.5	3.0	3.0	4.5	4.0
29	4.0	4.0	5.0	5.0	3.5	3.0	2.0	1.5	3.0	3.0	4.5	4.0
30	4.5	4.0	5.0	4.5	3.5	3.5	2.0	1.5	---	---	5.0	4.5
31	5.0	4.5	---	---	3.5	3.5	2.0	2.0	---	---	5.0	4.5
MONTH	6.5	4.0	6.0	4.5	4.5	1.5	3.5	1.5	3.5	1.5	---	---

12039300 NORTH FORK QUINAULT RIVER NEAR AMANDA PARK, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	4.5	5.0	4.5	5.5	4.5	8.0	5.5	9.5	8.0	9.5	9.0
2	4.5	4.0	5.5	5.0	6.0	4.5	8.0	5.5	10.0	8.5	10.0	9.0
3	4.5	3.5	5.5	4.5	6.5	4.5	8.0	6.0	10.0	8.5	10.5	9.5
4	4.5	4.0	6.0	4.5	5.5	4.5	8.5	6.0	10.5	8.5	10.5	9.5
5	4.0	4.0	5.5	4.5	6.5	4.5	8.5	6.0	10.5	9.0	10.0	9.5
6	4.0	3.5	5.0	4.5	6.0	5.0	8.5	6.0	11.0	9.5	9.5	9.0
7	3.5	3.5	5.5	4.5	6.5	5.0	7.0	6.0	11.0	9.5	9.0	9.0
8	3.5	3.5	5.0	4.5	6.5	5.0	7.0	6.5	11.5	10.0	9.0	9.0
9	3.5	3.0	5.5	4.5	5.5	5.0	6.5	6.0	11.0	9.5	9.0	8.5
10	3.5	3.5	6.0	4.5	5.5	5.0	6.0	5.5	10.5	9.0	9.0	8.0
11	4.0	3.5	5.5	5.0	5.5	5.0	6.5	6.0	10.0	9.0	9.0	8.0
12	3.5	3.0	6.0	4.5	5.5	5.0	6.5	6.0	9.5	9.0	9.5	8.5
13	4.0	3.5	5.5	4.5	6.5	5.5	7.0	6.0	9.5	8.5	9.5	8.5
14	4.0	4.0	5.5	4.5	6.0	5.5	8.5	6.5	9.0	8.5	10.0	9.0
15	4.5	4.0	4.5	4.5	5.5	5.0	9.0	6.5	9.0	9.0	10.0	9.0
16	4.5	4.0	5.0	4.5	5.5	5.5	9.0	6.5	9.5	9.0	9.5	9.5
17	4.0	3.5	5.0	4.5	5.5	5.0	9.0	7.0	9.5	9.0	9.5	8.5
18	4.5	3.5	6.0	4.5	7.0	5.5	9.0	6.5	9.5	8.5	8.5	7.0
19	4.5	4.0	6.0	4.5	7.0	5.5	9.0	7.0	9.5	9.0	7.0	7.0
20	4.5	4.5	5.5	4.5	6.0	5.5	9.0	6.5	10.0	9.5	7.0	7.0
21	4.5	4.0	5.0	4.5	6.5	5.5	9.5	7.0	10.0	9.5	7.0	6.5
22	4.5	3.5	5.5	4.5	6.0	5.5	9.0	7.0	10.0	9.5	6.5	6.0
23	4.5	4.0	4.5	4.5	5.5	5.5	9.0	7.0	10.5	9.5	6.0	6.0
24	4.5	4.5	5.5	4.5	5.5	5.5	9.0	8.0	11.0	10.0	6.0	6.0
25	4.5	4.5	6.0	4.5	6.0	5.5	9.0	8.0	11.0	10.0	6.0	5.5
26	5.0	4.5	6.0	4.5	6.0	5.5	9.0	7.0	11.0	10.0	6.0	5.5
27	5.5	4.5	5.5	4.5	7.0	5.5	9.5	7.0	10.5	9.5	5.5	5.0
28	5.0	4.5	6.0	4.5	6.5	5.5	10.0	8.0	11.0	10.0	6.0	5.5
29	4.5	4.0	5.5	4.5	8.0	5.5	10.0	8.0	10.5	10.0	6.5	5.5
30	4.5	4.0	5.5	4.0	8.0	5.5	10.0	8.5	10.5	9.0	7.0	6.5
31	---	---	5.5	4.5	---	---	10.0	8.5	9.5	8.5	---	---
MONTH	5.5	3.0	6.0	4.0	8.0	4.5	10.0	5.5	11.5	8.0	10.5	5.0

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
OCT.					MAY				
27...	1300	681	3	5.5	19...	1510	1020	2	5.5
DEC.					JULY				
22...	1220	525	5	7.1	26...	1255	777	3	6.3
MAR.					SEPT.				
15...	1505	2160	7	41	26...	1340	388	4	4.2

12039500 QUINAULT RIVER AT QUINAULT LAKE, WASH.

LOCATION.--Lat 47°27'28", long 123°53'17", in SW¼NE¼ sec.25, T.23 N., R.10 W., Grays Harbor County, at U.S. Highway 101 bridge and gaging station, 0.2 mile downstream from Quinault Lake, 2.0 miles southwest of Quinault, and at mile 33.4.

DRAINAGE AREA.--264 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to June 1960, October 1962 to September 1970 (partial-record station), October 1971 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	1315	4410	8.4	.3	1.3	.4	28	23	1.1	--	.000	.00
DEC.												
14...	1345	3330	7.8	.6	1.7	.0	25	21	1.4	.07	.000	.00
FEB.												
08...	1410	3310	7.7	.7	1.8	.6	22	18	1.8	.21	.000	.07
APR.												
11...	1415	3740	7.0	.5	2.1	.4	27	22	1.2	.16	.000	.07
JUNE												
13...	1400	3100	7.7	.4	.9	.1	28	23	1.2	.12	.000	.05
AUG.												
08...	1400	1550	8.1	.6	1.4	.1	26	21	.6	.14	.000	.05

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	.05	.000	.000	22	0	54	7.5	10.3	51	1	10.2	100
DEC.												
14...	.10	.000	.000	22	1	57	7.2	6.3	46	2	10.8	250
FEB.												
08...	.06	.010	.010	22	4	57	7.2	5.1	18	4	12.0	100
APR.												
11...	.02	.000	.050	20	0	49	7.1	6.1	16	4	12.0	100
JUNE												
13...	.05	.000	.000	21	0	61	7.3	13.4	7	1	11.0	>20
AUG.												
08...	.01	.010	.020	23	1	65	7.3	12.4	10	1	9.3	400

12040600 QUEETS RIVER AT QUEETS, WASH.

LOCATION.--Lat 47°32'30", long 124°19'55", near center of sec. 35, T.24 N., R.13 W., Jefferson County, at U.S. Highway 101 bridge at Queets, and at mile 1.5.

DRAINAGE AREA.--449 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1961, November 1961 to September 1970 (partial-record station), October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	1215	--	6.0	.6	2.5	.5	21	17	2.7	--	.000	.01
DEC.												
14...	1215	9300	3.9	.6	2.6	.4	14	11	3.1	.13	.000	.03
FEB.												
08...	1310	8800	4.3	.6	2.4	1.0	15	12	2.9	.19	.010	.12
APR.												
11...	1310	6500	5.4	.6	2.9	.7	20	16	2.3	.17	.010	.10
JUNE												
13...	1310	1900	8.4	.7	1.3	.2	31	25	1.3	.12	.000	.04
AUG.												
08...	1255	1750	8.4	.9	1.9	.2	25	21	1.2	.07	.000	.04

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	.11	.000	.020	17	0	54	7.5	6.5	29	5	11.9	400
DEC.												
14...	.15	.000	.030	12	1	42	7.1	5.2	21	10	12.4	500
FEB.												
08...	.05	.010	.040	13	1	43	7.2	6.0	51	15	12.7	160
APR.												
11...	.08	.000	.020	16	0	47	7.0	5.4	31	7	12.5	100
JUNE												
13...	.06	.000	.010	24	0	69	7.3	12.3	13	5	11.4	150
AUG.												
08...	.02	.000	.020	25	4	66	7.3	16.8	9	5	9.2	400

12041200 HOH RIVER AT U.S. HIGHWAY 101, NEAR FORKS, WASH.

LOCATION.--Lat 47°48'25", long 124°14'59", in NE¼NE¼ sec.33, T.27 N., R.12 W., Jefferson County, at U.S. Highway 101 bridge, 250 ft upstream from gaging station, 1.0 mile downstream from Hell Roaring Creek, 11.5 miles southeast of Forks, and at mile 15.4.

DRAINAGE AREA.--253 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1961, November 1961 to September 1970 (partial-record station), October 1971 to September 1972. Prior to November 1961, published as 12041000.
Water temperatures: November 1970 to April 1971.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	1130	2640	10	.7	1.8	.4	31	25	2.1	--	.000	.01
DEC.												
14...	1145	3090	8.1	.9	2.3	.1	27	22	2.1	.10	.000	.02
FEB.												
08...	1200	2880	8.1	.8	2.3	.5	24	20	2.0	.17	.010	.07
APR.												
11...	1200	2650	9.7	.9	2.4	.4	30	25	2.0	.13	.020	.13
JUNE												
13...	1215	910	11	.7	1.0	.1	33	27	1.1	.11	.010	.03
AUG.												
08...	1200	2160	9.4	.6	1.2	.2	26	21	.6	.16	.000	.16

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	.16	.000	.010	28	2	73	7.6	5.8	19	1	12.1	700
DEC.												
14...	.15	.000	.010	24	2	66	7.1	5.0	56	2	12.4	300
FEB.												
08...	.04	.010	.020	24	4	63	7.5	5.4	37	6	12.7	100
APR.												
11...	.04	.000	.030	28	3	67	7.4	5.4	15	4	12.4	100
JUNE												
13...	.02	.000	.010	30	3	81	7.4	10.1	8	4	11.5	90
AUG.												
08...	.02	.000	.030	26	5	69	7.4	13.7	9	15	10.1	--

12042300 SOLEDUCK RIVER NEAR FORKS, WASH.

LOCATION.--Lat 48°01'15", long 124°22'55", in SW¼NE¼ sec.16, T.29 N., R.13 W., Clallam County, at bridge on Maxfield Road, 4.6 miles north of Forks, and at mile 23.4.

DRAINAGE AREA.--About 194 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	0950	--	9.0	.8	1.8	.4	33	27	1.3	--	--	--
DEC.												
14...	1110	2150	7.5	1.4	3.0	.3	30	25	2.7	.04	.000	.01
FEB.												
08...	1115	1720	7.9	1.3	2.9	.3	30	25	2.4	.13	.000	.04
APR.												
11...	1115	1500	8.4	1.3	3.2	.4	32	26	2.2	.22	.010	.16
JUNE												
13...	1115	863	10	1.4	2.3	.2	36	30	2.6	.14	.000	.03
AUG.												
08...	1100	401	11	1.7	2.4	.2	42	34	1.5	.08	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	--	--	--	26	0	66	7.2	4.4	--	--	12.6	130
DEC.												
14...	.26	.000	.010	24	0	67	7.1	5.3	40	2	12.5	350
FEB.												
08...	.06	.010	.010	25	0	64	7.5	5.3	26	4	12.9	100
APR.												
11...	.01	.050	.050	26	0	67	7.5	5.4	9	2	12.5	75
JUNE												
13...	.04	.000	.010	31	1	86	7.4	9.6	6	1	11.7	225
AUG.												
08...	.02	.000	.000	34	0	98	7.8	16.8	5	1	9.8	120

12043330 HOKO RIVER AT HIGHWAY 112, NEAR SEKIU, WASH.

LOCATION.--Lat 48°16'28", long 124°21'19", in NE¼ sec.15, T.32 N., R.13 W., Clallam County, at bridge on State Highway 112, 2.5 miles northwest of Sekiu.

DRAINAGE AREA.--68.7 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
DEC.												
14...	1000	1330	4.3	1.0	3.9	.0	18	15	4.3	.15	.000	.08
FEB.												
08...	1010	893	4.6	1.0	4.0	.9	18	15	3.9	.26	.000	.11
APR.												
11...	1015	706	4.6	1.1	3.9	.5	23	19	3.4	.18	.000	.07
JUNE												
13...	1015	41	27	46	410	13	38	31	850	.20	.010	.04
AUG.												
08...	1015	37	20	36	290	11	39	32	540	.18	.000	.04

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.												
14...	.35	.000	.050	15	0	53	7.0	5.6	17	20	12.2	600
FEB.												
08...	.09	.010	.020	16	1	54	7.6	5.5	41	10	12.7	150
APR.												
11...	.26	.000	.020	16	0	52	7.2	5.5	29	5	12.3	150
JUNE												
13...	.08	.000	.010	260	230	2590	7.2	13.5	12	1	9.8	700
AUG.												
08...	.06	.000	.010	200	170	2160	7.2	18.9	12	1	7.8	270

12043400 PYSHT RIVER NEAR PYSHT, WASH.

LOCATION.--Lat 48°11'23", long 124°09'23", in NE¼NE¼ sec.18, T.31 N., R.11 W., Clallam County, at bridge on State Highway 112, 1.9 miles southwest of Pysht.

DRAINAGE AREA.--37.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
DEC.												
14...	0915	620	4.5	1.1	3.9	.1	17	14	3.6	.14	.000	.03
FEB.												
08...	0930	575	4.6	1.0	3.9	.8	16	13	3.6	.25	.000	.11
APR.												
11...	0930	315	4.8	1.2	4.3	.6	20	16	2.9	.05	.010	.04
JUNE												
13...	0930	16	9.1	1.9	5.5	.6	38	31	3.7	.19	.010	.03
AUG.												
08...	0930	7.8	8.7	1.8	5.4	.5	36	30	3.2	.14	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
DEC.												
14...	.80	.000	.040	16	2	59	7.2	5.2	57	8	12.1	500
FEB.												
08...	.11	.010	.030	16	2	57	7.7	4.7	35	15	12.8	150
APR.												
11...	.42	.000	.040	17	1	18	7.3	5.1	18	3	12.4	200
JUNE												
13...	.07	.000	.002	31	0	104	7.2	13.0	18	1	9.8	900
AUG.												
08...	.05	.010	.020	29	0	106	7.1	18.6	15	2	7.0	500

12045560 ELWHA RIVER BELOW LITTLE RIVER NEAR PORT ANGELES, WASH.

LOCATION.--Lat 48°03'56", long 123°34'35", in SW¼NE¼ sec.28, T.30 N., R.7 W., Clallam County, at U.S. Highway 101 bridge, 0.3 mile downstream from Little River, 1.0 mile downstream from gaging station and 8 miles southwest of Port Angeles.

DRAINAGE AREA.--About 294 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to June 1960, July 1960 to September 1970 (partial-record station), October 1971 to September 1972. Published as 12045500 prior to October 1971.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
27...	0815	906	13	.9	1.8	.2	45	37	1.3	--	.000	.01
DEC.												
14...	0805	1230	14	1.5	2.2	.0	47	39	1.0	.02	.000	.02
FEB.												
08...	0830	992	14	1.8	2.6	1.1	51	42	1.3	.16	.010	.11
APR.												
11...	0830	1780	12	1.4	2.0	.5	46	38	.9	.06	.010	.05
JUNE												
13...	0805	3830	9.2	.6	.5	.1	32	26	.8	.16	.010	.04
AUG.												
08...	0815	1650	11	.8	1.4	.1	34	28	.6	.10	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
27...	.02	.000	.000	36	0	68	7.6	7.1	14	1	11.7	100
DEC.												
14...	.07	.000	.060	41	3	96	7.6	3.7	43	1	12.8	70
FEB.												
08...	.05	.010	.010	42	1	105	7.6	3.2	22	5	13.5	30
APR.												
11...	.04	.000	.010	36	0	80	7.8	4.3	10	4	13.0	64
JUNE												
13...	2.2	.000	.020	25	0	67	7.4	7.8	7	6	11.9	100
AUG.												
08...	.01	.000	.010	31	3	80	7.5	12.3	2	1	10.7	170

12048600 DUNGENESS RIVER AT HIGHWAY 101 NEAR SEQUIM, WASH.

LOCATION.--Lat 48°04'34", long 123°08'58", in NE¼SE¼ sec.23, T.30 N., R.4 W., Clallam County, at U.S. Highway 101 bridge, 1.4 miles southeast of Carlsborg, 1.8 miles west of Sequim, 5.4 miles downstream from gaging station, and at mile 6.4.

DRAINAGE AREA.--178 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to June 1960, July 1960 to September 1970 (partial-record station), October 1971 to September 1972. Prior to October 1971, published as 12048000.
Water temperatures: July 1968 to December 1969, at site 5.4 miles upstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
26...	1600	--	19	2.3	3.2	.4	69	57	1.9	--	.010	.02
DEC.												
13...	1515	240	18	2.8	3.6	.4	70	57	1.6	.11	.000	.02
FEB.												
07...	1430	161	22	3.7	4.4	.8	83	68	3.2	.15	.000	.07
APR.												
10...	1530	421	19	2.7	3.3	.6	75	62	1.2	.13	.000	.13
JUNE												
12...	1655	717	12	1.5	1.3	.2	47	39	.9	.30	.000	.06
AUG.												
07...	1550	306	13	1.5	1.8	.2	46	38	.3	.10	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
26...	.01	.000	.010	57	0	91	7.7	7.1	12	1	11.7	100
DEC.												
13...	.10	.000	.010	56	0	135	7.7	3.4	14	1	13.1	100
FEB.												
07...	.06	.020	.020	70	2	160	7.8	2.7	13	2	13.1	21
APR.												
10...	.06	.000	.040	59	0	128	7.9	4.6	11	16	12.5	100
JUNE												
12...	.03	.000	.030	36	0	97	7.6	8.2	9	14	11.7	150
AUG.												
07...	.02	.000	.010	39	1	89	7.7	17.4	5	2	9.7	--

12052500 BIG QUILCENE RIVER NEAR QUILCENE, WASH.

LOCATION.--Lat 47°48'39", long 122°54'33", in SE¼ sec.22, T.27 N., R.2 W., Jefferson County, at U.S. Highway 101 bridge, 1.9 miles southwest of Quilcene, and at mile 2.6.

DRAINAGE AREA.--66.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to June 1960, July 1960 to September 1970 (partial-record site), October 1971 to September 1972. Prior to October 1971, published as 12052300.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
26...	1510	55	15	2.2	5.6	.3	51	42	12	--	.000	.03
DEC.												
13...	1410	218	11	2.3	3.6	.0	44	36	5.5	.02	.000	.01
FEB.												
07...	1340	116	12	2.4	4.7	.2	52	43	8.2	.15	.000	.06
APR.												
10...	1430	316	10	2.0	3.0	.3	46	38	3.2	.24	.000	.10
JUNE												
12...	1600	257	11	1.6	1.5	.2	47	39	3.0	.32	.000	.04
AUG.												
07...	1445	101	13	1.9	3.4	.1	47	39	4.3	.08	.000	.01

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
26...	.07	.000	.010	46	5	130	7.4	7.9	11	1	11.6	100
DEC.												
13...	.17	.000	.010	37	1	93	7.7	4.5	18	1	12.8	70
FEB.												
07...	.07	.020	.020	40	0	108	7.7	5.1	4	2	13.0	25
APR.												
10...	.07	.000	.060	33	0	83	7.5	5.7	9	1	12.3	150
JUNE												
12...	.03	.010	.030	34	0	89	7.5	8.3	6	2	11.8	320
AUG.												
07...	.03	.000	.000	40	2	100	7.7	17.9	4	1	10.2	--

12053500 DOSEWALLIPS RIVER AT BRINNON, WASH.

LOCATION.--Lat 47°41'25", long 122°53'52", near center of NW¼ sec.2, T.25 N., R.2 W., Jefferson County, at U.S. Highway 101 bridge, 0.2 mile north of Brinnon and at mile 0.2.

DRAINAGE AREA.--116 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to June 1960, July 1960 to September 1970 (partial-record station), October 1971 to September 1972.
Water temperatures: October 1969 to January 1971, at site 6.8 miles upstream published as 12053000.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
26...	1445	--	12	.8	1.5	.3	41	34	.6	--	.000	.02
DEC.												
13...	1345	430	13	1.5	2.1	.0	47	39	1.2	.02	.000	.01
FEB.												
07...	1310	470	15	1.8	2.5	.2	54	44	1.2	.13	.000	.05
APR.												
10...	1400	990	14	1.4	2.3	.7	48	39	1.1	.24	.000	.09
JUNE												
12...	1520	1130	11	.9	1.0	.5	43	35	2.6	.28	.000	.06
AUG.												
07...	1410	774	11	.8	1.3	.1	37	30	.6	.09	.000	.01

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
26...	.05	.000	.010	33	0	82	7.4	6.9	18	4	12.4	170
DEC.												
13...	.11	.000	.000	39	0	91	7.4	4.3	12	1	13.0	100
FEB.												
07...	.05	.000	.000	45	1	110	7.6	6.1	5	1	13.1	40
APR.												
10...	.09	.000	.040	41	1	90	7.6	5.9	7	1	12.4	20
JUNE												
12...	.04	.000	.020	31	0	82	7.5	7.6	7	5	12.0	24
AUG.												
07...	.01	.000	.010	31	0	72	7.6	15.2	6	3	10.5	--

12054000 DUCKABUSH RIVER NEAR BRINNON, WASH.

LOCATION.--Lat 47°41'03", long 123°00'37", in NW¼SW¼ sec.1, T.25 N., R.3 W., Jefferson County, at gaging station 5.2 miles west of Brinnon and at mile 4.5.

DRAINAGE AREA.--66.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1972 to September 1972. Records for periods July 1960 to September 1961, published as 12054000 and November 1961 to February 1972, published as 12054100, were collected at site 4.4 miles downstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, APRIL TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
APR. 10...	1345	527	11	.9	1.5	.3	39	32	.7	.13	.000	.03
JUNE 12...	1500	314	9.0	.7	.4	.2	30	25	.9	.24	.000	.04
AUG. 07...	1345	325	8.6	.7	1.4	.1	30	25	.8	.14	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
APR. 10...	.05	.000	.020	31	0	69	7.6	5.2	6	1	13.0	20
JUNE 12...	.03	.000	.020	25	1	65	7.5	7.8	5	2	12.4	55
AUG. 07...	.01	.000	.010	24	0	59	7.4	14.9	3	1	10.6	--

12054100 DUCKABUSH RIVER AT U.S. HIGHWAY 101, NEAR BRINNON, WASH.

LOCATION.--Lat 47°38'57", long 122°56'01", in SW¼SE¼ sec.16, T.25 N., R.2 W., Jefferson County, at U.S. Highway 101 bridge, 2.7 miles southwest of Brinnon and at mile 0.1.

DRAINAGE AREA.--76.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1961, November 1961 to September 1970 (partial-record station), October 1971 to February 1972 (discontinued). Prior to November 1961, published as 12054000.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO FEBRUARY 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
26...	1430	587	8.0	.6	2.4	.1	29	24	4.0	--	.000	.03
DEC.												
13...	1325	338	8.9	1.3	1.8	.2	38	31	.8	.01	.000	.01
FEB.												
07...	1245	200	12	3.4	20	.7	43	35	31	.18	.000	.06

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
26...	.07	.000	.010	22	0	65	7.4	6.8	22	2	12.2	400
DEC.												
13...	.08	.000	.000	28	0	71	7.4	5.7	28	1	12.9	100
FEB.												
07...	.04	.000	.000	44	9	205	7.4	5.3	25	2	13.1	50

12054500 HAMMA HAMMA RIVER NEAR ELDON, WASH.

LOCATION.--Lat 47°35'18", long 123°06'57", in SE¼NW¼ sec.7, T.24 N., R.3 W., Mason County, at former gaging station 0.3 mile downstream from Watson Creek, 4.6 miles northwest of Eldon, and at mile 6.2.

DRAINAGE AREA.--51.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: March 1972 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, MARCH TO SEPTEMBER 1972

DATE	TIME	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)
APR. 10...	1245	9.3	.9	1.7	.4	34	28	1.4	.08	.000	.03	.06
JUNE 12...	1415	8.3	.7	.4	.3	33	27	1.0	.28	.000	.03	.04

DATE	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
APR. 10...	.000	.090	27	0	61	7.6	4.8	7	1	12.5	100
JUNE 12...	.000	.010	24	0	60	7.5	8.0	4	1	12.1	>40

12055000 HAMMA HAMMA RIVER AT ELDON, WASH.

LOCATION.--Lat 47°32'48", long 123°03'25", in NW¼ sec.27, T.24 N., R.3 W., Mason County, 0.5 mile west of Eldon, 0.6 mile upstream from U.S. Highway 101, and at mile 0.8.

DRAINAGE AREA.--83.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1961 to September 1970 (partial-record station), October 1971 to February 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO FEBRUARY 1972

DATE	TIME	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)
OCT. 26...	1400	16	26	210	7.4	36	30	390	--	.000	.02	.07

DATE	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
OCT. 26...	.000	.000	150	120	1450	7.3	8.1	--	--	--	--

12056500 NORTH FORK SKOKOMISH RIVER BELOW STAIRCASE RAPIDS, NEAR HOODSPORT, WASH.

LOCATION.--Lat 47°30'52", long 123°19'43", in NW¼ sec.4, T.23 N., R.5 W., Mason County, Olympic National Park, temperature recorder at gaging station on left bank 1.2 miles upstream from Lake Cushman, 2.8 miles upstream from Dry Creek, 11.3 miles northwest of Hoodsport, and at mile 29.2.

DRAINAGE AREA.--57.2 sq mi.

PERIOD OF RECORD.--Water temperatures: April 1965 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 12.0°C Aug. 28; minimum, 1.0°C Apr. 8, 12, 13, 17, 22.

Period of record:
Water temperatures: Maximum, 14.0°C Aug. 17, 18, 1965; minimum (1965-67, 68-72), 0.5°C Dec. 27, 1965.

REMARKS.--Recorder stopped Feb. 16 to Mar. 23; range in temperature 1.5°C to 3.0°C.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	6.5	4.5	4.5	4.5	4.5	3.0	2.0	2.0	2.0	---	---
2	7.0	7.0	4.5	4.5	4.5	4.5	3.0	3.0	2.0	2.0	---	---
3	8.0	7.0	4.5	4.5	4.5	4.0	3.0	2.0	2.0	2.0	---	---
4	8.0	8.0	5.0	4.5	4.0	4.0	2.0	2.0	2.0	2.0	---	---
5	8.0	8.0	4.5	4.5	4.0	4.0	3.0	2.0	2.0	2.0	---	---
6	8.5	8.0	4.5	4.5	4.0	4.0	3.0	3.0	3.0	2.0	---	---
7	8.5	8.0	4.5	4.5	4.0	4.0	3.0	2.0	3.0	3.0	---	---
8	8.0	8.0	4.5	4.5	4.0	3.0	2.0	1.5	3.0	3.0	---	---
9	8.5	8.0	4.5	4.5	3.5	3.0	2.0	2.0	3.0	3.0	---	---
10	8.5	8.5	5.0	4.5	3.5	3.5	2.0	2.0	3.0	3.0	---	---
11	8.5	8.5	5.0	5.0	3.5	3.0	2.0	2.0	3.0	3.0	---	---
12	8.5	8.5	5.0	5.0	3.0	3.0	2.0	2.0	3.0	3.0	---	---
13	8.5	8.0	5.0	5.0	3.0	3.0	2.0	2.0	3.0	3.0	---	---
14	8.0	7.0	5.0	5.0	3.0	3.0	3.0	2.0	3.0	2.0	---	---
15	7.0	7.0	5.0	5.0	3.0	3.0	3.0	3.0	2.0	2.0	---	---
16	7.0	6.5	5.0	5.0	3.0	3.0	3.0	3.0	---	---	---	---
17	6.5	6.5	5.0	5.0	3.0	3.0	3.0	3.0	---	---	---	---
18	6.5	6.5	5.0	5.0	3.0	3.0	3.0	3.0	---	---	---	---
19	6.5	6.5	5.0	5.0	3.0	3.0	3.0	3.0	---	---	---	---
20	6.5	6.5	5.0	5.0	3.0	3.0	3.0	2.0	---	---	---	---
21	6.5	6.5	5.0	5.0	3.0	2.0	3.0	2.0	---	---	---	---
22	6.5	6.5	5.0	4.5	3.0	2.0	3.0	3.0	---	---	---	---
23	6.5	6.5	4.5	4.5	2.0	2.0	3.0	3.0	---	---	---	---
24	6.5	6.0	4.5	4.5	2.0	2.0	3.0	2.0	---	---	2.0	2.0
25	6.0	6.0	4.5	4.5	2.0	2.0	2.0	2.0	---	---	3.0	2.0
26	6.0	5.5	4.5	4.0	2.0	2.0	2.0	2.0	---	---	3.0	3.0
27	5.5	5.0	4.0	4.0	2.0	2.0	2.0	2.0	---	---	3.0	3.0
28	5.0	4.5	4.0	4.0	2.0	2.0	2.0	2.0	---	---	3.0	3.0
29	4.5	4.5	4.5	4.0	2.0	2.0	2.0	2.0	---	---	3.0	3.0
30	4.5	4.5	4.5	4.5	2.0	2.0	2.0	2.0	---	---	3.5	3.0
31	4.5	4.5	---	---	2.0	2.0	2.0	2.0	---	---	3.5	3.5
MONTH	8.5	4.5	5.0	4.0	4.5	2.0	3.0	1.5	---	---	---	---

12056500 NORTH FORK SKOKOMISH RIVER BELOW STAIRCASE RAPIDS, NEAR HOODSPORT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	3.5	3.5	3.0	2.0	6.5	5.5	8.5	7.0	10.0	9.5	11.0	10.0
2	3.5	3.0	3.5	3.0	6.5	5.5	9.0	6.5	10.0	9.5	11.0	10.0
3	3.5	3.0	3.5	3.0	7.0	5.5	9.0	7.0	10.0	9.0	11.5	10.5
4	3.0	2.0	4.0	3.0	6.5	5.5	9.0	7.0	10.0	9.5	11.5	10.5
5	2.0	2.0	4.0	3.0	7.0	5.5	9.5	8.0	10.5	10.0	11.0	10.5
6	2.0	1.5	4.0	3.5	7.0	5.5	9.0	8.0	10.5	10.0	10.5	10.0
7	1.5	1.5	4.5	3.5	7.0	6.0	9.0	8.0	11.0	10.0	10.5	10.0
8	1.5	1.0	4.0	3.5	7.0	5.5	8.5	8.0	11.0	10.5	10.5	10.0
9	1.5	1.5	4.5	3.5	7.0	6.0	8.0	7.0	11.0	10.5	10.5	9.5
10	1.5	1.5	4.5	3.5	6.0	5.5	7.0	6.5	11.0	10.0	10.0	9.5
11	1.5	1.5	4.5	4.0	6.0	5.5	7.0	6.5	10.5	10.0	10.0	9.5
12	1.5	1.0	5.0	4.0	6.0	5.5	7.0	7.0	10.0	10.0	10.0	9.5
13	2.0	1.0	5.0	4.0	6.5	6.0	8.0	6.5	10.0	9.5	10.5	9.5
14	1.5	1.5	4.5	3.5	6.5	6.0	9.0	7.0	10.0	9.0	10.5	9.5
15	2.0	1.5	4.0	4.0	6.5	6.0	9.0	8.0	9.5	9.5	10.5	10.0
16	1.5	1.5	4.0	3.5	6.5	6.0	9.5	8.0	10.5	9.5	10.0	9.5
17	1.5	1.0	4.0	4.0	6.5	6.0	9.5	8.5	10.5	10.0	9.5	9.0
18	1.5	1.5	5.0	4.0	8.0	6.0	9.5	8.5	10.5	9.5	9.0	9.0
19	2.0	1.5	5.5	4.0	8.0	6.0	9.5	8.5	10.5	10.0	9.0	8.5
20	2.0	2.0	5.5	4.5	7.0	6.5	9.5	8.0	10.5	10.0	8.5	8.5
21	2.0	1.5	5.0	4.5	7.0	6.0	9.5	8.5	10.5	10.5	8.5	8.0
22	1.5	1.0	5.0	4.5	6.5	6.0	9.5	8.5	10.5	10.0	8.0	7.0
23	1.5	1.5	5.0	4.5	6.5	6.0	9.5	8.5	11.0	10.0	7.0	7.0
24	2.0	1.5	5.0	4.5	6.5	6.0	9.5	9.0	11.5	10.5	7.0	7.0
25	3.0	2.0	5.5	4.0	7.0	6.0	9.5	9.0	11.5	10.5	7.0	6.5
26	3.0	2.0	6.0	4.5	7.0	6.0	9.5	9.0	11.5	10.5	6.5	6.5
27	3.5	2.0	6.0	5.0	8.0	6.5	10.0	9.0	11.5	11.0	6.5	6.0
28	3.5	2.0	6.0	5.0	8.0	6.5	10.0	9.0	12.0	11.0	6.0	6.0
29	2.0	2.0	6.0	5.0	8.5	6.5	10.0	9.0	11.5	11.0	6.5	6.0
30	3.0	2.0	6.5	5.0	8.5	7.0	10.0	9.5	11.5	10.5	7.0	6.5
31	---	---	6.5	5.0	---	---	10.0	9.5	11.0	10.0	---	---
MONTH	3.5	1.0	6.5	2.0	8.5	5.5	10.0	6.5	12.0	9.0	11.5	6.0

12059500 NORTH FORK SKOKOMISH RIVER NEAR POTLATCH, WASH.

LOCATION.--Lat 47°19'42", long 123°14'33", in NE¼NW¼ sec.7, T.21 N., R.4 W., Mason County, temperature recorder at gaging station on left bank, 1.0 mile upstream from mouth, 5.4 miles southwest of Potlatch, and 7.2 miles downstream from city of Tacoma's Cushman Dam No. 2.

DRAINAGE AREA.--117 sq mi, including 99 sq mi upstream from Cushman Dam No. 2, which is normally noncontributing.

PERIOD OF RECORD.--Water temperatures: March 1965 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 18.0°C July 4, 5; minimum, 2.0°C Feb. 3.

Period of record:
Water temperatures: Maximum, 19.0°C July 8, 1968; minimum, 1.0°C Dec. 27, 1965, Dec. 31, 1968, Jan. 23, 31, Feb. 7, 1969, Jan. 14, 15, 1971.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	9.5	8.0	8.0	8.0	7.0	5.5	5.0	4.0	3.0	4.5	4.0
2	12.0	10.5	8.0	7.0	7.0	7.0	5.0	4.5	3.5	3.0	4.5	4.0
3	11.5	10.5	8.0	8.0	7.0	6.0	4.5	4.0	3.5	2.0	5.0	4.0
4	13.0	10.5	8.0	8.0	6.5	5.0	4.5	4.5	4.0	3.5	4.5	4.0
5	12.0	10.5	8.0	7.0	6.0	5.5	5.5	4.5	4.5	4.0	5.0	4.5
6	12.0	11.0	7.0	6.5	6.0	5.5	5.5	5.5	4.5	4.5	5.0	4.5
7	12.0	10.5	8.0	7.0	6.0	5.5	5.5	4.5	5.0	4.5	5.0	4.5
8	11.0	9.0	8.0	8.0	6.0	4.5	4.5	3.5	5.0	5.0	5.0	4.5
9	11.0	9.0	8.0	8.0	5.5	5.0	4.5	4.5	5.0	4.5	5.0	5.0
10	11.0	9.5	8.0	8.0	6.0	5.5	4.5	4.5	4.5	4.0	5.5	5.0
11	11.5	10.0	8.5	8.0	6.0	4.5	5.0	4.5	5.5	4.5	6.0	5.5
12	11.5	10.0	9.0	8.5	5.5	4.5	5.0	4.5	5.0	4.5	6.0	6.0
13	11.0	10.0	8.5	8.5	5.5	5.0	4.5	4.5	4.5	4.5	6.5	6.0
14	10.0	9.0	8.5	8.5	5.5	5.5	5.5	4.5	4.5	4.0	6.5	6.0
15	10.0	9.0	8.5	8.5	5.5	5.5	5.0	5.0	5.0	4.0	7.0	6.0
16	9.5	8.0	8.5	8.5	5.5	5.5	5.5	5.0	5.0	4.5	7.0	6.0
17	9.0	8.0	8.5	8.5	5.5	5.5	5.5	5.5	4.5	4.0	8.0	6.0
18	9.0	9.0	8.5	8.0	5.5	5.5	5.5	5.0	5.5	4.5	8.0	6.5
19	9.0	9.0	8.5	8.0	5.5	5.5	5.5	5.5	5.0	5.0	7.0	6.0
20	9.0	9.0	8.5	8.5	5.5	5.0	5.5	5.5	5.0	4.5	7.0	6.0
21	9.0	8.5	9.0	8.0	5.0	4.5	5.5	5.5	5.0	4.5	6.0	6.0
22	9.0	9.0	8.0	6.5	5.0	5.0	5.5	5.5	5.0	5.0	6.0	6.0
23	9.5	9.0	6.5	6.5	5.0	5.0	5.5	5.0	5.0	4.5	6.0	5.0
24	9.0	8.5	8.0	6.5	5.5	5.0	5.0	4.5	5.0	4.5	6.0	5.0
25	9.0	9.0	8.0	8.0	5.5	5.0	4.5	4.5	4.5	4.5	6.0	5.0
26	9.0	8.5	8.0	8.0	5.0	5.0	4.5	3.5	4.5	4.5	6.0	4.5
27	8.5	8.0	8.0	8.0	5.0	5.0	3.5	3.5	5.0	4.5	5.5	5.0
28	8.0	6.5	8.0	8.0	5.0	4.5	3.5	3.0	5.0	5.0	6.5	5.0
29	7.0	6.0	8.0	8.0	5.0	4.5	3.5	3.0	5.0	4.5	8.0	4.5
30	8.0	7.0	8.0	8.0	5.0	5.0	3.5	3.5	---	---	8.5	5.0
31	8.0	7.0	---	---	5.0	5.0	4.5	3.5	---	---	6.5	5.0
MONTH	13.0	6.0	9.0	6.5	8.0	4.5	5.5	3.0	5.5	2.0	8.5	4.0

12059500 NORTH FORK SKOKOMISH RIVER NEAR POTLATCH, WASH.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	6.0	9.0	5.5	14.0	10.5	16.5	11.0	13.5	12.0	14.5	10.5
2	8.0	5.5	10.0	7.0	16.0	10.0	16.5	10.5	13.0	11.5	14.5	10.5
3	8.0	4.5	11.0	8.0	16.0	10.5	17.0	11.0	15.5	11.0	14.5	11.0
4	6.5	6.5	13.0	8.0	15.5	10.5	18.0	11.0	14.0	11.0	14.0	11.0
5	7.0	6.5	12.0	8.0	16.5	11.0	18.0	11.0	13.5	11.0	14.0	11.5
6	6.5	5.0	9.5	8.5	15.5	.1.5	14.5	11.5	13.5	11.0	13.0	10.5
7	5.0	4.5	10.5	8.0	14.5	11 0	13.5	11.0	15.5	11.5	13.0	11.0
8	5.5	4.0	11.0	8.5	14.5	10.0	13.5	11.0	14.0	11.0	13.0	11.0
9	5.0	4.0	10.0	8.0	13.0	10.5	15.5	11.0	11.0	11.0	13.5	10.5
10	5.5	4.5	12.0	7.0	13.0	11.	12.0	10.0	11.0	10.0	12.0	11.0
11	5.5	4.5	12.0	8.0	12.0	9.5	12.0	11.0	11.0	10.0	13.0	9.5
12	5.0	4.0	14.5	9.0	12.0	9.5	12.0	11.5	13.0	10.5	13.0	10.0
13	6.0	4.5	14.0	9.5	13.5	11.0	14.5	11.0	13.5	11.0	13.5	10.0
14	7.0	5.5	14.0	9.5	13.5	10.5	15.5	11.0	12.0	10.5	13.5	10.0
15	6.5	5.5	11.0	10.0	12.0	10.5	16.5	11.0	11.0	11.0	13.0	10.0
16	6.5	5.5	11.0	9.5	13.5	9.5	17.0	11.0	13.5	11.0	13.0	11.0
17	8.0	5.0	10.5	9.5	14.0	10.0	17.0	11.5	12.0	11.5	13.0	10.5
18	6.5	5.0	11.0	9.0	15.5	10.0	14.5	10.5	13.5	11.0	11.5	10.0
19	6.5	4.5	14.0	8.0	16.0	10.0	15.5	11.0	13.0	11.0	11.0	10.0
20	6.5	5.5	13.0	9.0	14.5	10.5	16.0	11.0	13.5	11.0	10.5	10.0
21	8.0	5.0	11.5	10.0	14.5	11.0	15.5	11.0	13.0	11.0	11.0	10.0
22	8.0	4.5	14.5	10.0	13.0	10.5	16.5	11.0	12.0	11.0	10.5	10.0
23	6.5	5.5	12.0	10.0	13.5	11.0	15.5	11.5	14.5	11.0	10.5	9.0
24	7.0	6.0	11.5	9.0	11.0	11.0	13.5	11.5	15.0	11.0	10.5	9.5
25	9.0	5.5	14.0	8.5	14.5	10.5	13.5	11.5	15.0	11.0	10.5	9.0
26	9.5	6.0	15.0	9.0	14.0	11.0	11.5	11.0	15.0	11.0	10.0	9.0
27	10.5	6.0	15.0	10.0	15.5	11.0	15.5	11.0	15.5	11.0	10.0	8.0
28	9.0	6.0	16.5	10.5	16.5	11.0	15.5	11.0	15.5	11.5	10.0	9.0
29	8.5	5.0	14.5	11.0	15.0	11.0	15.5	11.0	15.0	11.5	11.0	9.5
30	8.0	5.5	15.5	10.0	16.0	11.0	15.5	11.0	14.5	11.0	11.0	9.0
31	---	---	15.0	10.0	---	---	16.0	11.5	14.5	10.5	---	---
MONTH	10.5	4.0	16.5	5.5	16.5	9.5	18.0	10.0	15.5	10.0	14.5	8.0

12061500 SKOKOMISH RIVER NEAR POTLATCH, WASH.

LOCATION.--Lat 47°18'36", long 123°10'33", in SE¼NW¼ sec.15, T.21 N.,R.4 W., Mason County, temperature recorder at gaging station at bridge on U.S. Highway 101, 3.7 miles downstream from confluence of North and South Forks, 4.7 miles southwest of Potlatch, and 5.3 miles upstream from mouth.

DRAINAGE AREA.--227 sq mi.

PERIOD OF RECORD.--Chemical analyses: August 1960 to September 1961, October 1961 to September 1970 (partial-record station), October 1971 to September 1972.
Water temperatures: May 1955 to September 1962, October 1963 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 14.0°C July 29, 31, Aug. 7; minimum, 4.0°C on several days during March and April.

Period of record:
Water temperatures: Maximum, 20.5°C July 13, 1961; minimum (1955-62, 1964-72), 1.0°C Mar. 7, 1956.

REMARKS.--Temperature recorder stopped Mar. 26 to Apr. 19; range in temperature 4.0°C to 5.5°C.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT.												
26...	1320	1720	6.8	1.3	1.7	.6	32	26	2.3	--	.000	.02
DEC.												
13...	1210	1200	7.4	1.6	2.1	.2	33	27	1.5	.04	.000	.02
FEB.												
07...	1130	2420	6.4	1.4	2.2	.7	30	25	1.9	.21	.000	.14
APR.												
10...	1130	1730	6.8	1.5	2.2	.7	36	30	1.3	.15	.000	.09
JUNE												
12...	1310	525	7.9	1.8	1.4	.4	40	33	1.3	.38	.000	.03
AUG.												
07...	1220	359	8.5	1.9	2.2	.1	40	33	1.0	.06	.000	.02

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.												
26...	.09	.010	.010	22	0	54	8.2	8.3	45	3	11.4	200
DEC.												
13...	.13	.000	.010	25	0	61	7.2	5.6	10	1	12.0	100
FEB.												
07...	.04	.010	.040	22	0	57	7.3	5.8	32	2	12.5	300
APR.												
10...	.09	.000	.040	23	0	57	7.4	7.1	11	3	11.8	40
JUNE												
12...	.03	.000	.010	27	0	72	7.4	10.6	4	1	10.9	50
AUG.												
07...	.04	.000	.010	29	0	70	7.3	15.3	2	1	9.8	--

12061500 SKOKOMISH RIVER NEAR POTLATCH, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	10.5	8.5	8.5	8.5	8.5	7.0	7.0	5.0	5.0	5.0	4.5
2	10.5	10.5	8.5	8.5	8.5	8.5	7.0	6.5	5.0	5.0	5.0	4.5
3	10.5	10.5	8.5	8.5	8.5	8.0	6.5	6.0	5.0	5.0	4.5	4.0
4	11.0	10.5	8.5	8.5	8.0	7.0	6.5	6.0	5.0	5.0	4.5	4.0
5	10.5	10.5	8.5	8.5	7.0	7.0	6.5	6.5	5.5	5.0	4.5	4.5
6	10.5	10.5	8.5	8.5	7.0	7.0	6.5	6.5	5.5	5.5	4.5	4.0
7	11.0	10.5	9.0	8.5	7.0	7.0	6.5	6.5	5.5	5.0	4.5	4.0
8	10.5	10.5	8.5	8.5	7.0	6.5	6.5	6.0	5.0	5.0	4.5	4.5
9	10.5	10.5	8.5	8.5	6.5	6.5	6.5	6.0	5.0	5.0	4.5	4.5
10	10.5	10.5	8.5	8.5	7.0	6.5	6.5	6.0	5.5	5.0	4.5	4.5
11	10.5	10.5	9.0	8.5	7.0	6.5	6.5	6.0	5.5	5.5	4.5	4.5
12	10.5	10.5	9.0	9.0	6.5	6.0	6.5	6.0	5.5	5.5	4.5	4.5
13	11.0	10.5	9.0	8.5	8.0	6.5	6.5	6.0	5.5	5.0	4.5	4.5
14	10.5	10.5	8.5	8.5	8.0	7.0	6.5	6.5	5.5	5.0	4.5	4.5
15	10.5	10.5	8.5	8.5	8.0	7.0	6.5	6.5	5.5	5.5	5.0	4.5
16	10.5	10.0	9.0	8.5	8.0	8.0	6.5	6.0	5.5	5.0	5.5	5.0
17	10.0	10.0	9.0	8.5	8.0	8.0	6.0	6.0	5.0	4.5	5.5	5.0
18	10.0	10.0	8.5	8.5	8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
19	10.0	10.0	9.0	8.5	8.0	7.0	6.0	6.0	5.0	5.0	5.0	4.5
20	10.0	10.0	9.0	9.0	7.0	7.0	6.0	5.5	5.0	5.0	5.0	4.5
21	10.0	10.0	9.0	8.5	7.0	6.5	6.0	5.5	5.0	4.5	5.0	4.5
22	10.0	10.0	8.5	8.5	7.0	7.0	6.0	6.0	5.0	5.0	5.0	4.5
23	10.0	10.0	8.5	8.5	7.0	7.0	6.0	6.0	5.0	5.0	5.0	4.5
24	10.0	10.0	8.5	8.5	7.0	7.0	6.0	5.5	5.0	5.0	5.0	4.5
25	10.0	10.0	8.5	8.5	7.0	7.0	5.5	5.5	5.0	5.0	5.0	4.5
26	10.0	9.5	8.5	8.5	7.0	7.0	5.5	5.5	5.0	5.0	---	---
27	9.5	9.0	8.5	8.5	7.0	7.0	5.5	5.5	5.0	5.0	---	---
28	9.0	8.5	8.5	8.5	7.0	7.0	5.5	5.5	5.0	5.0	---	---
29	8.5	8.5	8.5	8.5	7.0	7.0	5.5	5.5	5.0	4.5	---	---
30	8.5	8.5	8.5	8.5	7.0	7.0	5.5	5.5	---	---	---	---
31	8.5	8.5	---	---	7.0	7.0	5.5	5.0	---	---	---	---
MONTH	11.0	8.5	9.0	8.5	8.5	6.0	7.0	5.0	5.5	4.5	5.5	4.0

12061500 SKOKOMISH RIVER NEAR POTLATCH, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	6.5	5.5	11.0	10.0	13.0	11.5	13.5	12.0	12.0	11.0
2	---	---	7.0	6.0	11.5	10.0	13.5	11.0	13.0	12.0	12.0	11.0
3	---	---	7.0	6.0	11.5	10.0	13.5	11.5	13.5	11.5	12.0	11.0
4	---	---	8.0	6.0	12.0	11.0	13.5	11.5	13.5	12.0	12.0	11.5
5	---	---	8.0	6.5	12.0	11.0	13.5	11.5	13.5	12.0	12.0	11.5
6	---	---	7.0	6.5	12.0	11.5	13.0	12.0	13.5	11.5	11.5	11.0
7	---	---	7.0	6.5	12.0	11.0	12.0	11.5	14.0	12.0	11.5	11.0
8	---	---	8.0	6.5	12.0	11.0	12.0	11.5	13.5	12.0	11.5	11.0
9	---	---	7.0	6.5	11.5	11.0	13.5	11.5	13.5	12.0	12.0	11.0
10	---	---	8.5	6.5	11.5	11.0	12.0	11.0	12.0	11.5	11.5	11.0
11	---	---	8.5	7.0	11.0	10.5	11.5	11.0	12.0	11.5	11.5	11.0
12	---	---	9.0	7.0	11.0	10.5	11.5	11.0	12.0	11.5	11.5	11.0
13	---	---	9.0	8.0	11.0	10.5	12.0	11.0	13.0	11.5	11.5	11.0
14	---	---	9.0	7.0	11.5	10.5	13.0	11.0	12.0	11.0	11.5	11.0
15	---	---	9.0	8.5	11.0	10.5	13.5	11.0	11.5	11.0	11.5	11.0
16	---	---	8.5	8.0	11.5	10.5	13.5	11.5	13.0	11.5	11.5	11.0
17	---	---	8.5	8.0	12.0	10.5	13.5	12.0	12.0	11.5	11.5	11.0
18	---	---	9.0	8.0	12.0	10.5	13.5	12.0	13.0	11.5	11.0	11.0
19	---	---	9.5	8.0	13.0	11.0	13.5	12.0	12.0	11.5	11.0	11.0
20	5.0	4.5	9.5	8.5	12.0	11.5	13.5	11.5	13.0	11.5	11.0	11.0
21	5.0	4.0	10.0	9.5	12.0	11.0	13.5	12.0	12.0	11.5	11.0	11.0
22	5.0	4.0	10.5	9.0	11.5	11.0	13.5	12.0	12.0	11.5	11.0	11.0
23	5.0	4.0	10.0	9.0	11.5	11.0	13.5	12.0	13.0	11.5	11.0	11.0
24	5.0	5.0	9.5	8.5	11.0	11.0	13.0	12.0	13.0	11.5	11.0	11.0
25	5.5	4.5	10.0	8.5	12.0	11.0	13.5	11.5	13.0	11.5	11.0	11.0
26	5.5	5.0	10.5	9.0	12.0	11.0	13.0	11.5	13.0	11.5	11.0	11.0
27	6.5	5.0	10.5	9.5	12.0	11.0	13.5	11.5	13.0	11.5	11.0	10.5
28	6.0	5.5	11.5	10.5	13.0	11.0	13.5	11.5	13.0	11.5	10.5	10.5
29	6.0	4.5	11.0	10.5	13.0	11.5	14.0	11.5	13.0	11.5	11.0	10.5
30	5.5	5.0	11.5	10.0	13.0	11.5	13.5	11.5	12.0	11.5	11.0	10.5
31	---	---	11.5	10.0	---	---	14.0	12.0	12.0	11.0	---	---
MONTH	---	---	11.5	5.5	13.0	10.0	14.0	11.0	14.0	11.0	12.0	10.5

12068500 DEWATTO RIVER NEAR DEWATTO, WASH.

LOCATION.--Lat 47°28'10", long 123°01'33", in NE¼SW¼ sec.23, T.23 N., R.3 W., Mason County, at highway bridge 400 ft upstream from gaging station, 2.2 miles northeast of Dewatto and at mile 2.0.

DRAINAGE AREA.--18.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972.
Water temperatures: April 1968 to August 1970.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
OCT. 26...	1155	25	7.4	2.8	2.3	.5	41	34	1.5	--	.000	.03
DEC. 13...	1045	129	3.5	1.3	1.6	.0	20	16	1.1	.13	.000	.02
FEB. 07...	1005	92	4.5	1.6	1.8	.5	24	20	1.8	.26	.010	.07
APR. 10...	1010	153	3.1	1.1	2.4	.7	23	19	1.1	.17	.010	.10
JUNE 12...	1130	25	6.9	2.7	1.9	.2	45	37	1.2	.28	.010	.03
AUG. 07...	1035	16	7.9	3.0	2.4	.2	44	36	.6	.16	.000	.04

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	INTERMEDIATE COLIFORM (COL. PER 100 ML)
OCT. 26...	.11	.010	.020	30	0	70	7.6	8.5	18	1	11.0	400
DEC. 13...	.22	.000	.010	14	0	35	7.0	4.4	8	1	12.4	400
FEB. 07...	.07	.010	.030	18	0	48	7.4	4.9	37	2	12.5	400
APR. 10...	.14	.000	.040	12	0	39	7.5	6.7	29	1	11.8	250
JUNE 12...	.05	.010	.030	28	0	75	7.4	11.2	27	1	10.4	200
AUG. 07...	.08	.010	.020	32	0	75	7.4	14.5	23	1	10.0	--

12073890 WYE LAKE NEAR BELFAIR, WASH.

LOCATION.--Lat 47°25'25", long 122°45'37", in NE¼SE¼ sec.2, T.22 N., R.1 W., Kitsap County, 3.6 miles southeast of Belfair.

DRAINAGE AREA.--1.06 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
02...	0850	3.0	5.2	2.9	0	0	1.1	.3	1.0
02...	0855	12	5.2	3.0	10	--	--	--	--
MAY									
10...	0745	3.0	14.4	3.6	60	0	--	--	--
10...	0755	12	14.4	--	--	--	--	--	--
JUNE									
29...	0740	3.0	18.5	3.0	40	20	--	--	--
29...	0750	12	18.5	3.1	30	0	--	--	--
AUG.									
24...	1000	3.0	21.1	2.8	20	20	1.4	.4	1.3
24...	1005	11	21.1	2.7	20	20	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
02...	.2	8	7	.0	1.0	.1	.18	.000	.03
02...	--	8	7	--	--	--	.18	.000	.03
MAY									
10...	--	12	10	--	--	--	.19	.010	.01
10...	--	--	--	--	--	--	.46	.010	.08
JUNE									
29...	--	5	4	--	--	--	.25	.000	.02
29...	--	7	6	--	--	--	.17	.000	.00
AUG.									
24...	.2	7	6	4.6	1.2	--	.51	.000	.05
24...	--	8	7	--	--	--	.53	.000	.04

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
02...	.02	.000	.000	20	11	4	0	16	10
02...	.02	.000	.000	--	--	--	--	17	--
MAY									
10...	.01	.000	.010	--	--	--	--	18	--
10...	.01	.000	.020	--	--	--	--	18	--
JUNE									
29...	.00	.010	.010	--	--	--	--	18	--
29...	.00	.000	.020	--	--	--	--	--	--
AUG.									
24...	.01	.000	.000	--	15	5	0	19	18
24...	.01	.000	.000	--	--	--	--	18	--

12074500 MASON LAKE NEAR UNION, WASH.

LOCATION.--Lat 47°21'14", long 122°55'17", in SE¼NW¼ sec.34, T.22 N., R.2 W., Mason County, 8.5 miles east of Union.

DRAINAGE AREA.--20.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
06...	1015	3.0	4.5	.1	0	0	3.1	1.6	1.9
06...	1020	70	4.5	4.8	30	--	--	--	--
MAY									
10...	1105	3.0	13.0	4.8	20	0	--	--	--
10...	1115	75	8.2	4.9	40	0	--	--	--
JUNE									
29...	1010	3.0	17.1	5.2	30	0	--	--	--
29...	1020	77	9.5	5.7	40	10	--	--	--
OCT.									
05...	1000	3.0	15.0	6.6	20	0	4.5	1.8	1.9
05...	1005	75	9.8	9.0	260	24	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
06...	.2	24	20	2.4	1.8	.1	.13	.000	.05
06...	--	25	21	--	--	--	.13	.000	.04
MAY									
10...	--	24	20	--	--	--	.26	.000	.07
10...	--	24	20	--	--	--	.43	.010	.12
JUNE									
29...	--	23	19	--	--	--	.19	.000	.00
29...	--	20	16	--	--	--	.14	.000	.00
OCT.									
05...	.2	24	20	2.2	2.1	--	.22	.000	.06
05...	--	23	19	--	--	--	.13	.000	.05

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
06...	.03	.000	.010	28	23	14	0	39	15
06...	.00	.000	.010	--	--	--	--	38	--
MAY									
10...	.02	.000	.010	--	--	--	--	40	--
10...	.01	.000	.020	--	--	--	--	40	--
JUNE									
29...	.00	.000	.010	--	--	--	--	42	--
29...	.00	.000	.010	--	--	--	--	41	--
OCT.									
05...	.01	.000	.005	--	31	19	0	41	22
05...	.02	.000	.006	--	--	--	--	41	--

12074780 PHILLIPS LAKE NEAR SHELTON, WASH.

LOCATION.--Lat 47°14'52", long 122°57'52", in NE¼SW¼ sec.5, T.20 N., R.2 W., Mason County, 7.0 miles northeast of Shelton.

DRAINAGE AREA.--0.50 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
07...	0925	3.0	5.1	1.1	10	13	1.2	.4	1.2
07...	0930	18	5.1	1.2	30	--	--	--	--
MAY									
10...	1550	3.0	14.9	.4	40	30	--	--	--
10...	1600	18	12.5	.4	50	30	--	--	--
JUNE									
29...	1340	3.0	19.7	.4	70	10	--	--	--
29...	1350	16	18.5	.4	70	20	--	--	--
AUG.									
24...	1425	3.0	22.8	.2	100	20	1.5	.5	1.6
24...	1430	16	21.4	.2	140	58	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
07...	.3	11	9	.0	1.3	.1	.34	.000	.19
07...	--	10	8	--	--	--	.32	.000	.19
MAY									
10...	--	10	8	--	--	--	.30	.000	.00
10...	--	11	9	--	--	--	.44	.010	.06
JUNE									
29...	--	11	9	--	--	--	.33	.000	.03
29...	--	6	5	--	--	--	.43	.000	.06
AUG.									
24...	.2	9	7	2.5	1.2	--	.29	.000	.03
24...	--	10	8	--	--	--	.33	.000	.06

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
07...	.05	.000	.000	29	11	5	0	21	10
07...	.05	.000	.010	--	--	--	--	20	--
MAY									
10...	.02	.000	.020	--	--	--	--	20	--
10...	.03	.000	.020	--	--	--	--	20	--
JUNE									
29...	.00	.000	.020	--	--	--	--	20	--
29...	.00	.030	.040	--	--	--	--	20	--
AUG.									
24...	.01	.000	.000	--	12	6	0	22	19
24...	.01	.000	.010	--	--	--	--	21	--

12079000 DESCHUTES RIVER NEAR RAINIER, WASH.

LOCATION.--Lat 46°52'23", long 122°43'44", in SE¼NW¼ sec.18, T.16 N., R.1 E., Thurston County, at bridge on State Highway 507, 2.2 miles southwest of Rainier, 4.3 miles downstream from gaging station, and at mile 21.6.

DRAINAGE AREA.--101 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to July 1960, October 1971 to September 1972 (discontinued). Water temperatures: August 1968 to September 1970, collected at gage 4.3 miles upstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES. WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
05...	1500	58	11	2.9	7.0	1.0	52	43
27...	1410	158	8.1	1.6	4.8	1.1	41	34
NOV.								
03...	1415	200	7.5	1.8	4.1	.6	35	29
30...	1345	431	5.8	1.3	3.3	.2	28	23
DEC.								
07...	1415	452	6.1	1.5	3.5	.5	28	23
21...	1300	750	5.8	1.6	3.6	1.0	27	22
JAN.								
04...	1330	185	7.3	2.1	5.1	.7	37	30
18...	1215	389	5.8	1.7	4.0	.5	31	25
FEB.								
02...	1350	248	6.8	1.9	4.3	.9	35	29
15...	1300	920	5.2	1.4	3.3	.4	26	21
MAR.								
07...	1415	1220	4.5	1.3	3.1	.7	25	21
21...	1230	376	6.3	1.5	3.3	.5	35	29
APR.								
04...	1415	236	6.7	1.8	4.2	1.1	36	30
18...	1415	275	7.1	1.8	4.3	.9	37	30
MAY								
02...	1415	269	6.5	1.8	3.9	3.0	37	30
16...	1335	496	6.8	1.8	3.9	.4	37	30
JUNE								
06...	1410	94	9.9	2.5	6.0	.6	45	37
20...	1425	75	9.6	2.6	5.6	1.1	50	41
JULY								
06...	1400	62	9.3	2.7	6.5	1.9	50	41
18...	1455	60	10	2.8	6.4	1.9	51	42
AUG.								
01...	1405	45	11	2.9	6.1	1.3	50	41
15...	1335	40	10	3.0	6.1	1.1	51	42
SEP.								
06...	1300	31	11	3.0	7.0	1.0	54	44
19...	1315	38	11	2.9	6.2	.9	57	47

12079000 DESCHUTES RIVER NEAR RAINIER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
05...	2.5	7.3	.13	.010	.04	.06	.000	.020	39
27...	2.3	5.5	--	.010	.19	.08	.010	.020	27
NOV.									
03...	3.0	4.5	--	.010	.10	.10	.020	.040	26
30...	3.8	3.1	.12	.000	.12	.25	.010	.040	20
DEC.									
07...	3.5	2.9	.19	.000	.05	.27	.010	.040	21
21...	3.5	3.0	.41	.000	.08	.50	.020	.030	21
JAN.									
04...	3.5	5.8	--	.000	.07	.30	.020	.020	27
18...	2.8	3.6	.07	.000	.03	.46	.020	.040	21
FEB.									
02...	3.5	4.1	.32	.000	.08	.23	.010	.020	25
15...	2.7	3.6	.52	.000	.09	.51	.010	.060	19
MAR.									
07...	2.6	2.8	.26	.010	.19	.58	.010	.060	17
21...	2.0	3.1	.14	.000	.06	.21	.020	.020	22
APR.									
04...	3.6	3.2	.56	.010	.15	.31	.020	.030	24
18...	2.4	3.1	.73	.010	.24	.18	.010	.050	25
MAY									
02...	4.2	3.1	.68	.010	.15	.19	.020	.040	24
16...	1.7	3.4	.15	.000	.00	.12	.010	.090	24
JUNE									
06...	2.3	6.9	.32	.010	.09	.13	.010	.040	35
20...	3.4	6.0	.56	.010	.10	.15	.010	.030	35
JULY									
06...	3.5	5.7	2.3	.010	.48	.14	.010	.050	34
18...	6.4	5.0	.29	.000	.06	.18	.020	.050	36
AUG.									
01...	3.9	6.0	.09	.020	.02	.16	.020	.040	39
15...	5.1	6.5	.19	.000	.04	.18	.010	.050	37
SEP.									
06...	2.9	7.5	.18	.000	.04	.14	.020	.030	40
19...	3.0	7.9	.22	.000	.07	.10	.010	.040	39

12079000 DESCHUTES RIVER NEAR RAINIER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
05..	0	117	.3	14.9	25	2	11.0	400
27...	0	82	6.9	7.1	23	4	12.1	600
NOV.								
03...	0	73	7.3	8.0	68	8	11.5	300
30...	0	66	7.5	7.3	60	15	11.8	100
DEC.								
07...	0	60	7.5	4.4	101	15	12.6	140
21...	0	58	7.2	5.0	114	20	12.1	500
JAN.								
04...	0	78	7.4	4.1	47	6	12.9	175
18...	0	67	7.0	4.3	57	8	12.4	200
FEB.								
02...	0	84	7.3	2.3	36	5	13.1	170
15...	0	54	7.4	6.3	72	15	12.4	600
MAR.								
07...	0	49	6.9	6.4	73	15	12.1	200
21...	0	64	7.0	8.0	35	5	11.2	100
APR.								
04...	0	71	7.2	9.9	30	5	11.1	70
18...	0	70	7.3	8.6	40	6	11.8	120
MAY								
02...	0	74	7.1	11.0	33	6	11.4	80
16...	0	75	7.2	11.1	21	2	10.6	380
JUNE								
06...	0	113	7.7	17.2	15	2	10.6	325
20...	0	120	7.6	15.2	18	3	10.2	1200
JULY								
06...	0	186	7.5	17.7	16	2	10.2	1250
18...	0	121	7.5	18.0	23	8	9.4	900
AUG.								
01...	0	113	7.7	16.3	10	2	9.8	1500
15...	0	125	7.1	15.0	22	1	10.0	2000
SEP.								
06...	0	118	7.4	14.0	15	2	10.2	400
19...	0	118	7.5	12.0	24	3	10.7	1200

12079380 OFFUTT LAKE NEAR EAST OLYMPIA, WASH.

LOCATION.--Lat 46°55'06", long 122°49'04", in SW¼NW¼ sec.33, T.17 N., R.1 W., Thurston County, 3.5 miles south of East Olympia.

DRAINAGE AREA.--1.85 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
07...	1315	3.0	6.2	13	20	38	3.2	1.2	3.1
07...	1320	20	5.8	13	70	--	--	--	--
MAY									
04...	1335	3.0	13.4	12	40	10	--	--	--
04...	1345	21	10.3	12	120	0	--	--	--
JUNE									
28...	1340	3.0	18.9	9.2	90	10	--	--	--
28...	1350	20	11.9	12	440	100	--	--	--
OCT.									
04...	1200	3.0	13.9	12	430	8	5.2	1.8	3.2
04...	1205	15	13.9	12	440	16	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
07...	.7	20	16	.1	2.0	.1	.22	.000	.07
07...	--	20	16	--	--	--	.21	.000	.06
MAY									
04...	--	22	18	--	--	--	.25	.010	.04
04...	--	22	18	--	--	--	.54	.010	.30
JUNE									
28...	--	19	16	--	--	--	.41	.000	.09
28...	--	24	20	--	--	--	.38	.000	.05
OCT.									
04...	.6	26	21	4.1	2.5	--	1.4	.003	.26
04...	--	25	21	--	--	--	.63	.000	.18

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
07...	.17	.000	.020	60	33	13	0	45	9
07...	.17	.000	.010	--	--	--	--	45	--
MAY									
04...	.10	.000	.020	--	--	--	--	45	--
04...	.13	.000	.020	--	--	--	--	48	--
JUNE									
28...	.00	.000	.020	--	--	--	--	48	--
28...	.00	.000	.030	--	--	--	--	52	--
OCT.									
04...	.05	.006	.029	--	43	20	0	52	19
04...	.05	.006	.026	--	--	--	--	52	--

12079980 DESCHUTES RIVER NEAR OLYMPIA, WASH.

LOCATION.--Lat 46°59'44", long 122°52'47", in NE¼NW¼ sec.1, T.17 N., R.2 W., Thurston County, at bridge on Henderson Boulevard, 1.2 miles east of Tumwater, 4.5 miles southeast of Olympia and at mile 4.6.

DRAINAGE AREA.--About 159 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
05...	1535	126	11	3.4	6.9	1.3	50	41
27...	1445	222	8.8	2.3	5.5	1.0	44	36
NOV.								
03...	1445	282	7.6	2.1	4.5	.9	37	30
30...	1420	560	6.3	1.7	3.9	.4	30	25
DEC.								
07...	1505	630	6.6	1.8	4.1	.5	29	24
21...	1345	1200	6.7	2.0	4.4	1.3	30	25
JAN.								
04...	1420	355	7.8	2.5	5.9	1.1	38	31
18...	1250	595	6.0	1.9	4.5	.8	32	26
FEB.								
02...	1425	440	7.1	2.2	5.1	1.2	34	28
15...	1350	1300	5.9	1.6	3.9	.4	27	22
MAR.								
07...	1445	1650	5.0	1.5	3.4	.8	24	20
21...	1315	630	6.7	1.9	4.2	.7	35	29
APR.								
04...	1445	390	7.6	2.3	5.4	1.3	38	31
18...	1445	450	8.0	2.2	5.2	1.0	38	31
MAY								
02...	1445	520	7.7	2.3	4.5	1.5	37	30
16...	1440	--	7.2	2.4	5.1	.8	42	34
JUNE								
06...	1445	230	9.3	2.9	5.9	.9	46	38
20...	1505	180	9.8	3.0	6.5	1.0	50	41
JULY								
06...	1515	155	10	3.1	7.0	1.0	48	39
18...	1545	150	4.8	.9	6.9	.5	24	20
AUG.								
01...	1500	123	11	3.5	6.8	.9	48	39
15...	1420	112	10	3.3	6.8	1.1	49	40
SEP.								
06...	1400	90	11	3.5	7.7	1.4	51	42
19...	1400	108	11	3.2	6.7	1.2	52	43

12079980 DESCHUTES RIVER NEAR OLYMPIA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
05...	4.3	6.9	.12	.010	.04	.24	.000	.020	41
27...	2.8	6.4	--	.010	.04	.19	.000	.020	31
NOV.									
03...	1.8	5.5	--	.010	.11	.22	.020	.030	28
30...	2.0	3.8	.17	.000	.12	.32	.010	.060	23
DEC.									
07...	3.0	3.8	.25	.010	.10	.26	.010	.060	24
21...	4.3	4.2	.47	.010	.10	.58	.010	.050	25
JAN.									
04...	3.7	7.0	--	.000	.10	.57	.020	.020	30
18...	3.6	4.6	.11	.000	.03	.66	.010	.040	23
FEB.									
02...	3.8	5.6	.35	.000	.09	.62	.020	.020	27
15...	3.2	4.4	.22	.000	.09	.72	.020	.060	21
MAR.									
07...	3.5	3.6	.32	.000	.27	.70	.010	.090	19
21...	2.6	4.9	.21	.000	.07	.38	.020	.030	25
APR.									
04...	5.1	6.1	.48	.000	.12	.43	.020	.020	28
18...	3.5	5.1	.60	.010	.19	.31	.010	.030	29
MAY									
02...	5.9	6.1	.75	.010	.22	.27	.000	.050	29
16...	2.3	6.2	.18	.000	.01	.28	.010	.010	28
JUNE									
06...	3.1	6.0	.38	.010	.08	.28	.000	.040	35
20...	4.9	8.6	.57	.000	.09	.34	.010	.040	37
JULY									
06...	4.1	8.0	.28	.010	.03	.39	.010	.030	38
18...	2.5	3.0	.32	.010	.04	.42	.020	.030	16
AUG.									
01...	5.8	9.0	.52	.020	.10	.39	.020	.080	42
15...	5.3	8.5	.25	.000	.05	.41	.020	.030	39
SEP.									
06...	5.4	10	.19	.010	.05	.38	.020	.030	42
19...	4.6	10	.32	.000	.08	.30	.010	.070	41

12079980 DESCHUTES RIVER NEAR OLYMPIA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
05...	0	117	7.2	15.2	29	2	10.5	100
27...	0	94	6.8	7.8	48	2	11.7	300
NOV.								
03...	0	80	7.2	7.9	65	7	11.1	600
30...	0	50	7.6	7.7	9	2	11.4	150
DEC.								
07...	0	66	7.3	5.0	114	20	12.3	120
21...	0	73	7.3	5.8	83	15	12.0	600
JAN.								
04...	0	88	7.4	4.7	38	4	12.6	125
18...	0	75	7.1	4.7	50	10	12.1	300
FEB.								
02...	0	87	7.3	3.5	40	7	12.7	170
15...	0	61	7.3	6.9	54	15	11.2	350
MAR.								
07...	0	55	6.8	6.9	75	35	11.9	400
21...	0	77	7.0	8.9	38	5	10.6	500
APR.								
04...	0	88	7.2	10.3	31	3	10.9	800
18...	0	86	7.4	10.3	35	5	11.2	300
MAY								
02...	0	90	7.2	13.7	30	4	11.1	130
16...	0	96	7.3	12.8	31	2	10.5	1600
JUNE								
06...	0	114	7.5	17.4	14	2	10.4	500
20...	0	120	7.4	15.9	18	3	9.9	1600
JULY								
06...	0	209	7.4	17.1	19	2	9.6	200
18...	0	136	7.5	19.2	20	6	9.2	600
AUG.								
01...	3	128	7.5	16.2	13	2	9.6	600
15...	0	131	7.1	14.7	16	1	9.7	100
SEP.								
06...	0	129	7.3	14.0	15	2	9.9	400
19...	0	127	7.5	12.0	22	2	11.1	1600

12080070 WARD LAKE NEAR TUMWATER, WASH.

LOCATION.--Lat 47°02'21", long 122°52'35", in SE¼NW¼ sec.36, T.18 N., R.2 W., Thurston County, 1.5 miles southeast of Tumwater.

DRAINAGE AREA.--0.95 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
01...	0915	3.0	5.0	.2	0	0	.8	.2	.9
01...	0920	63	4.6	.2	10	--	--	--	--
MAY									
03...	0840	3.0	12.8	.3	40	0	--	--	--
03...	0850	62	6.0	.3	40	0	--	--	--
JUNE									
27...	0900	3.0	17.8	.7	50	0	--	--	--
27...	0910	60	6.8	.7	180	40	--	--	--
OCT.									
03...	0910	3.0	15.5	.4	40	0	1.0	.4	1.1
03...	0915	57	7.0	1.0	3,600	110	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
01...	.6	7	6	.1	1.6	.1	.25	.000	.07
01...	--	7	6	--	--	--	.17	.000	.07
MAY									
03...	--	7	6	--	--	--	.12	.000	.00
03...	--	7	6	--	--	--	.18	.010	.02
JUNE									
27...	--	5	4	--	--	--	.31	.000	.07
27...	--	3	2	--	--	--	.32	.000	.16
OCT.									
03...	.7	5	4	2.5	2.3	--	.46	.003	.05
03...	--	8	7	--	--	--	3.6	.004	.59

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
01...	.05	.000	.030	12	8	3	0	19	8
01...	.05	.000	.020	--	--	--	--	18	--
MAY									
03...	.04	.000	.010	--	--	--	--	17	--
03...	.02	.000	.010	--	--	--	--	17	--
JUNE									
27...	.00	.000	.010	--	--	--	--	17	--
27...	.02	.000	.020	--	--	--	--	20	--
OCT.									
03...	.08	.004	.017	--	11	4	0	15	19
03...	.01	.037	.037	--	--	--	--	30	--

12080550 HICKS LAKE NEAR LACEY, WASH.

LOCATION.--Lat 47°01'02", long 122°47'42", in NE¼SW¼ sec.27, T.18 N., R.1 W., Thurston County, 1.5 miles southeast of Lacey.

DRAINAGE AREA.--1.80 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
01...	1305	3.0	5.6	.1	10	0	--	--	--
01...	1315	24	5.6	.2	30	--	--	--	--
MAY									
03...	1055	3.0	14.2	.3	90	0	--	--	--
03...	1105	33	9.9	.4	90	0	--	--	--
JUNE									
27...	1045	3.0	17.0	.6	100	0	--	--	--
27...	1055	34	10.0	1.6	1300	75	--	--	--
OCT.									
03...	1310	3.0	14.7	1.0	240	8	3.2	1.2	2.0
03...	1315	33	10.8	1.9	2800	140	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.								
01...	--	9	7	--	--	.37	.000	.06
01...	--	11	9	--	--	.23	.000	.06
MAY								
03...	--	12	10	--	--	.65	.000	.30
03...	--	11	9	--	--	.25	.010	.12
JUNE								
27...	--	13	11	--	--	--	--	--
27...	--	16	13	--	--	.45	.000	.17
OCT.								
03...	.4	10	8	3.7	2.7	.36	.002	.05
03...	--	14	11	--	--	.80	.002	.31

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.								
01...	.06	.000	.020	--	--	--	--	--
01...	.05	.000	.020	--	--	--	--	--
MAY								
03...	.02	.000	.020	--	--	--	--	--
03...	.04	.010	.020	--	--	--	--	--
JUNE								
27...	--	--	--	--	--	--	--	--
27...	.00	.030	.060	--	--	--	--	--
OCT.								
03...	.01	.004	.023	19	13	5	29	20
03...	.01	.074	.023	--	--	--	50	--

12081480 ST. CLAIR LAKE NEAR YELM, WASH.

LOCATION.--Lat 46°59'31", long 122°43'22", in SW¼NE¼ sec.6, T.17 N., R.1 E., Thurston County, 6.5 miles northwest of Yelm.

DRAINAGE AREA.--20.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for southernmost tip of lake. Water samples were taken at two locations within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
09...	0915	3.0	6.8	--	80	25	4.6	2.6	3.3
09...	0920	96	5.1	26	580	--	--	--	--
09...	1105	3.0	6.9	22	60	50	5.4	3.4	4.1
09...	1110	65	5.2	25	240	--	--	--	--
MAY									
04...	0815	3.0	15.0	25	400	20	--	--	--
04...	0825	96	5.2	27	720	200	--	--	--
04...	0955	3.0	15.1	22	270	0	--	--	-
04...	1005	65	5.3	26	320	20	--	--	--
JUNE									
28...	0940	3.0	16.9	30	390	40	--	--	--
28...	0950	94	5.2	27	1900	660	--	--	--
28...	1120	3.0	18.1	22	200	0	--	--	--
28...	1130	63	5.3	25	470	150	--	--	--
AUG.									
22...	1030	3.0	19.2	33	320	50	6.7	5.1	5.4
22...	1040	94	5.5	26	1900	700	--	--	--
22...	1255	3.0	20.8	24	170	50	5.7	4.4	4.8
22...	1300	63	5.7	27	1800	230	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
09...	1.5	30	25	.1	1.1	.2	.40	--	--
09...	--	37	30	--	--	--	.49	--	--
09...	1.8	41	34	.1	2.3	.0	.33	--	--
09...	--	42	34	--	--	--	.35	--	--
MAY									
04...	--	47	39	--	--	--	.79	.010	.33
04...	--	37	30	--	--	--	.72	.010	.18
04...	--	39	32	--	--	--	.74	.010	.62
04...	--	42	34	--	--	--	.31	.010	.10
JUNE									
28...	--	52	43	--	--	--	.63	.000	.14
28...	--	39	32	--	--	--	.60	.040	.14
28...	--	40	33	--	--	--	.51	.010	.11
28...	--	39	32	--	--	--	.48	.010	.22
AUG.									
22...	2.1	54	44	5.0	3.6	--	.47	.010	.07
22...	--	37	30	--	--	--	.63	.000	.11
22...	1.9	45	37	5.7	2.3	--	.53	.000	.09
22...	--	46	38	--	--	--	.55	.000	.21

12081480 ST. CLAIR LAKE NEAR YELM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	SUS-PENDED SOLIDS (MG/L)
MAR.									
09...	--	.030	.060	74	33	22	0	60	16
09...	--	.040	.090	--	--	--	--	75	--
09...	--	.030	.040	85	59	27	0	76	8
09...	--	.030	.040	--	--	--	--	81	--
MAY									
04...	.04	.010	.040	--	--	--	--	78	--
04...	.64	.050	.090	--	--	--	--	78	--
04...	.06	.010	.030	--	--	--	--	65	--
04...	.34	.040	.050	--	--	--	--	80	--
JUNE									
28...	.00	.010	.030	--	--	--	--	95	--
28...	.54	.090	.15	--	--	--	--	94	--
28...	.01	.010	.020	--	--	--	--	82	--
28...	.32	.040	.060	--	--	--	--	91	--
AUG.									
22...	.05	.000	.020	--	88	38	0	99	20
22...	.50	.10	.15	--	--	--	--	84	--
22...	.01	.000	.010	--	71	32	0	90	19
22...	.12	.26	.37	--	--	--	--	90	--

12082500 NISQUALLY RIVER NEAR NATIONAL, [illegible].

LOCATION.--Lat 46°45'10", long 122°04'57", in SW¼SW¼ sec.29, T.15 N., R.6 E., Pierce Coun[illegible] [illegible]perature recorder at gaging station on right bank 100 ft downstream from railroad bridge, 1.2 miles west of National, 3.3 miles upstream from Mineral Creek, and at mile 57.8.

DRAINAGE AREA.--133 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1951 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 14.5°C July 28, Aug. 18, Sept. 13; minimum, 0.5°C Jan. 10, 11, 26, 27, Feb. 3.

Period of record:
Water temperatures: Maximum, 18.5°C July 13, 1961, July 3, 1970; minimum (1951-63, 1965-72), freezing point on many days during winter months.

TEMPERATURE (°C) OF WATER, OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	6.5	4.5	4.0	4.5	3.0	3.5	3.0	2.0	1.0	3.5	3.0
2	11.5	6.0	5.0	4.0	4.5	3.5	3.5	1.5	1.0	1.0	3.5	3.0
3	12.0	6.5	5.0	4.5	4.0	3.0	1.5	1.0	2.0	0.5	4.0	3.5
4	13.0	8.5	5.0	3.5	3.5	2.0	2.0	1.0	3.0	1.5	4.5	3.5
5	13.0	8.0	4.0	2.0	3.5	2.0	3.0	2.0	3.5	3.0	4.5	4.5
6	11.5	6.5	4.5	2.0	4.0	2.0	3.5	3.0	3.0	3.0	4.5	3.5
7	11.0	6.0	4.5	4.0	3.0	1.5	3.0	1.5	4.5	3.0	5.0	3.5
8	11.0	5.5	5.0	4.0	3.0	1.0	2.0	1.0	3.5	3.0	7.0	4.0
9	10.5	5.5	5.0	4.0	2.0	2.0	2.0	1.0	4.0	2.0	5.5	4.5
10	9.5	6.0	5.5	4.5	3.0	2.0	1.0	0.5	4.5	2.0	5.0	4.5
11	9.5	7.0	6.0	5.0	3.0	2.0	1.5	0.5	4.0	3.5	5.0	4.5
12	9.5	5.0	6.0	5.0	2.0	2.0	1.5	1.0	3.5	3.0	5.0	4.5
13	8.0	6.0	5.5	4.5	2.0	2.0	2.0	1.0	3.5	3.0	5.0	4.5
14	7.0	5.0	5.0	4.5	2.0	1.5	3.0	1.5	3.0	2.0	6.0	4.0
15	7.0	4.5	5.0	3.5	3.0	2.0	3.0	1.5	3.5	3.0	5.0	4.5
16	8.0	3.5	5.5	4.0	3.0	2.0	3.5	2.0	3.5	3.5	7.0	4.0
17	6.0	2.0	5.0	3.5	4.0	3.0	3.5	1.0	3.5	3.5	7.0	4.0
18	7.0	5.0	5.0	3.5	3.5	3.5	2.0	1.0	5.0	3.5	5.0	4.5
19	6.5	5.5	5.5	4.5	3.5	3.0	2.0	2.0	4.5	4.0	5.5	4.5
20	7.0	5.0	5.5	4.0	3.0	1.5	2.0	1.5	5.0	3.5	7.0	4.0
21	6.5	4.0	4.5	3.5	3.0	1.5	3.0	1.5	5.0	3.5	6.0	4.5
22	6.5	5.5	4.5	3.0	3.0	2.0	3.5	3.0	4.5	4.0	5.5	4.5
23	7.0	5.5	4.5	3.5	3.5	2.0	3.5	2.0	5.0	4.0	6.5	4.0
24	7.0	5.0	5.0	4.0	4.0	3.0	2.0	1.5	4.5	3.5	4.5	3.0
25	6.0	5.0	4.0	4.0	3.5	3.0	2.0	1.5	5.0	3.5	3.5	3.0
26	6.5	3.5	4.5	4.0	3.0	2.0	1.5	0.5	3.5	3.0	4.0	2.0
27	4.5	3.0	5.0	4.0	2.0	1.0	1.0	0.5	5.0	3.5	4.5	3.5
28	4.0	2.0	5.0	4.0	2.0	1.0	1.0	1.0	4.5	4.0	6.5	3.5
29	4.0	2.0	5.0	4.5	2.0	2.0	1.0	0.5	4.0	3.0	8.0	3.5
30	4.0	3.0	5.0	4.0	3.0	2.0	1.5	1.0	---	---	8.0	3.0
31	4.5	3.5	---	---	4.0	3.0	2.0	1.5	---	---	7.0	3.5
MONTH	13.0	2.0	6.0	2.0	4.5	1.0	3.5	0.5	5.0	0.5	8.0	2.0

12082500 NISQUALLY RIVER NEAR NATIONAL, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	4.0	10.0	3.5	10.0	6.0	13.0	6.0	12.0	8.5	12.0	9.5
2	7.0	3.5	11.0	5.0	11.5	5.0	13.0	6.5	11.5	8.0	13.0	9.0
3	7.0	3.0	11.5	4.5	11.5	6.0	13.5	7.0	13.0	8.0	14.0	8.0
4	7.0	5.0	11.5	4.5	11.5	6.0	14.0	6.5	14.0	8.0	13.5	8.0
5	6.5	5.0	11.0	5.0	11.0	6.0	13.5	7.0	14.0	8.0	10.0	9.0
6	6.0	3.0	9.5	5.0	11.5	6.0	13.0	7.0	14.0	8.0	9.5	8.0
7	5.0	3.0	9.0	5.0	8.5	6.5	11.0	6.5	14.0	8.0	12.0	8.0
8	4.0	3.0	8.0	5.0	10.5	6.0	9.5	7.0	12.0	8.0	9.5	8.0
9	7.0	3.0	7.0	5.0	8.0	6.0	8.5	6.5	13.5	8.5	10.0	8.0
10	7.0	3.0	10.0	4.5	7.0	6.0	9.5	6.5	13.0	9.0	13.0	8.0
11	6.5	3.5	11.0	4.5	8.0	6.5	9.5	8.0	12.0	8.0	13.5	7.0
12	4.0	3.0	11.5	4.5	8.0	6.0	8.5	8.0	12.0	8.0	14.0	7.0
13	6.0	3.0	10.5	5.0	12.0	7.0	10.5	8.0	13.0	7.0	14.5	7.0
14	5.0	4.0	10.0	4.5	10.0	6.5	13.0	7.0	11.5	8.0	14.0	8.0
15	8.0	4.5	6.0	5.0	10.5	7.0	12.0	7.0	10.5	8.5	13.0	7.0
16	6.0	3.0	8.5	5.0	9.5	6.5	11.5	8.0	11.5	8.0	11.0	7.0
17	6.0	3.0	6.5	5.0	11.5	7.0	13.5	8.5	10.5	8.0	11.0	6.5
18	6.5	3.5	9.0	5.0	13.0	7.0	11.0	8.0	14.5	7.0	8.0	5.5
19	6.5	3.0	11.5	4.5	13.5	6.5	13.0	8.0	14.0	8.5	8.5	7.0
20	6.0	4.5	10.0	4.5	10.5	6.5	11.0	8.0	13.0	9.0	9.0	7.0
21	5.5	3.0	6.0	5.5	10.0	6.5	13.0	7.0	14.0	8.0	9.0	8.0
22	9.0	3.0	8.0	5.0	10.5	6.5	13.0	8.0	11.0	9.0	8.0	7.0
23	8.0	4.0	6.5	5.0	7.0	6.5	13.0	7.0	13.5	8.0	8.0	6.5
24	8.0	5.0	6.5	5.0	8.0	6.0	13.0	8.0	13.5	9.0	8.5	7.0
25	7.0	4.5	11.0	4.0	9.0	6.0	13.0	8.0	13.5	8.5	8.0	7.0
26	10.5	4.0	12.0	5.0	8.5	6.5	13.0	8.0	13.0	9.0	8.0	7.0
27	11.0	4.5	12.0	6.0	12.0	7.0	13.0	8.0	13.5	8.5	8.0	6.5
28	7.0	3.5	11.0	7.0	13.5	6.0	14.5	8.0	13.0	8.5	8.0	7.0
29	6.5	4.0	10.0	5.5	13.5	6.5	12.0	8.0	13.5	8.5	9.0	6.5
30	8.0	3.5	10.5	5.5	13.0	6.5	12.0	8.0	11.5	8.0	10.0	7.0
31	---	---	10.0	5.5	---	---	13.0	8.0	11.5	9.0	---	---
MONTH	11.0	3.0	12.0	3.5	13.5	5.0	14.5	6.0	14.5	7.0	14.5	5.5

12082990 MINERAL LAKE AT MINERAL, WASH.

LOCATION.--Lat 46°43'08", long 122°10'36", in NW¼NE¼ sec.9, T.14 N., R.5 E., Lewis County, at Mineral.

DRAINAGE AREA.--2.19 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
10...	1320	3.0	4.8	11	20	67	3.4	.9	3.0
10...	1325	31	4.9	11	430	--	3.5	1.0	3.0
MAY									
15...	0910	3.0	17.0	7.5	60	30	--	--	--
15...	0920	29	8.0	11	130	10	--	--	--
JUNE									
30...	1035	3.0	18.7	7.0	60	10	--	--	--
30...	1045	30	8.7	13	580	100	--	--	--
OCT.									
16...	1135	3.0	13.6	5.0	250	63	4.5	1.1	3.2
16...	1145	30	12.0	6.9	1000	300	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
10...	.6	23	19	.0	2.0	.1	.31	.000	.08
10...	.6	21	17	.1	2.6	--	.48	.000	.12
MAY									
15...	--	23	19	--	--	--	.42	.010	.05
15...	--	22	18	--	--	--	1.3	.010	.20
JUNE									
30...	--	20	16	--	--	--	.31	.010	.05
30...	--	24	20	--	--	--	.50	.010	.31
OCT.									
16...	.7	23	19	1.6	2.6	--	--	--	--
16...	--	25	21	--	--	--	--	--	--

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
10...	.40	.010	.020	51	32	12	0	44	11
10...	.41	.010	.030	--	33	13	0	44	--
MAY									
15...	.17	.000	.010	--	--	--	--	40	--
15...	.28	.000	.010	--	--	--	--	44	--
JUNE									
30...	.04	.000	.020	--	--	--	--	43	--
30...	.15	.010	.040	--	--	--	--	52	--
OCT.									
16...	--	--	--	--	30	16	0	46	21
16...	--	--	--	--	--	--	--	80	--

12086500 NISQUALLY RIVER AT LA GRANDE, WASH.

LOCATION.--Lat 46°50'25", long 122°19'38", in NW¼SE¼ sec.29, T.16 N., R.4 E., Pierce County, temperature recorder at gaging station on right bank, 0.4 mile downstream from city of Tacoma powerplant, 0.6 miles northwest of La Grande, 0.8 mile upstream from Mashel River, and at mile 40.4.

DRAINAGE AREA.--292 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1965 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 14.0°C Oct. 14-17; minimum, 2.0°C Jan. 19-21.

Period of record:
Water temperatures: Maximum, 14.0°C Oct. 11-15, 1966, Oct. 1, 1970, Oct. 14-17, 1971; minimum, 2.0°C Jan. 19-21, 1972.

REMARKS.--Recorder stopped Dec. 24 to Jan. 5 and Apr. 27 to May 15; range in temperature 3.0°C to 4.5°C and 4.5°C to 6.5°C, respectively.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	13.0	10.5	10.5	6.5	6.5	---	---	3.5	3.5	4.0	4.0
2	13.5	13.0	10.5	10.0	6.5	6.5	---	---	4.0	3.5	4.0	4.0
3	13.5	13.0	10.0	9.5	6.5	6.5	---	---	4.0	3.5	4.5	4.0
4	13.5	13.5	9.5	9.5	6.5	6.5	---	---	4.0	3.5	4.0	4.0
5	13.5	13.5	9.5	9.5	6.5	6.0	---	---	3.5	3.5	4.0	4.0
6	13.5	13.5	9.5	9.0	6.5	6.5	3.0	3.0	3.5	3.5	4.5	4.0
7	13.5	13.5	9.0	9.0	6.5	6.0	3.0	3.0	3.5	3.5	4.5	4.0
8	13.5	13.5	9.0	8.5	6.0	5.5	3.0	3.0	3.5	3.5	4.5	4.0
9	13.5	13.5	8.5	8.0	5.5	5.5	3.0	3.0	3.5	3.5	4.5	4.5
10	13.5	13.5	8.0	8.0	5.5	5.5	3.0	3.0	4.0	3.5	4.5	4.0
11	13.5	13.5	8.0	8.0	5.5	5.5	3.0	3.0	3.5	3.5	4.0	4.0
12	13.5	13.5	8.0	8.0	5.5	5.5	3.0	3.0	3.5	3.5	4.5	4.0
13	13.5	13.5	8.0	8.0	5.5	5.0	3.0	3.0	3.5	3.5	4.5	4.5
14	14.0	13.5	8.0	8.0	5.0	5.0	3.0	3.0	3.5	3.5	4.5	4.5
15	14.0	13.5	8.0	8.0	5.0	5.0	3.0	3.0	3.5	3.5	4.5	4.5
16	14.0	13.5	8.0	8.0	5.0	4.5	3.0	3.0	3.5	3.5	4.5	4.5
17	14.0	13.5	8.0	8.0	4.5	4.5	3.0	3.0	3.5	3.5	4.5	4.5
18	13.5	13.5	8.0	8.0	4.5	4.5	3.0	3.0	3.5	3.0	4.5	4.5
19	13.5	13.5	8.0	7.0	4.5	4.5	3.0	2.0	3.0	3.0	4.5	4.5
20	13.5	13.5	7.0	7.0	4.5	4.5	2.0	2.0	3.0	3.0	4.5	4.5
21	13.5	12.0	7.0	6.5	4.5	4.5	3.0	2.0	3.0	3.0	4.5	4.0
22	12.0	12.0	7.0	7.0	4.5	4.5	3.5	3.0	3.0	3.0	4.5	4.5
23	12.0	11.5	7.0	6.5	4.5	4.5	3.5	3.5	3.0	3.0	4.5	4.0
24	11.5	11.5	6.5	6.5	---	---	3.5	3.5	3.0	3.0	4.5	4.0
25	11.5	11.0	6.5	6.5	---	---	3.5	3.5	3.0	3.0	4.5	4.5
26	11.5	11.0	6.5	6.5	---	---	4.0	3.5	3.0	3.0	4.5	4.0
27	11.5	11.5	6.5	6.5	---	---	4.0	4.0	3.0	3.0	4.0	4.0
28	11.5	11.0	6.5	6.5	---	---	4.0	3.5	4.0	3.0	4.0	4.0
29	11.5	11.0	6.5	6.5	---	---	4.0	3.5	4.0	4.0	4.5	4.0
30	11.0	11.0	6.5	6.5	---	---	4.0	3.5	---	---	4.5	4.5
31	11.0	10.5	---	---	---	---	3.5	3.5	---	---	5.0	4.5
MONTH	14.0	10.5	10.5	6.5	---	---	4.0	2.0	4.0	3.0	5.0	4.0

12086500 NISQUALLY RIVER AT LA GRANDE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	4.5	---	---	8.5	8.0	9.5	9.0	11.0	10.5	11.0	10.5
2	4.5	4.5	---	---	8.5	8.0	10.0	[illegible]	11.0	10.5	11.0	10.5
3	4.5	4.0	---	---	9.0	8.	10.0	[illegible]	.0	10.5	11.0	10.5
4	4.5	4.5	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	10.5
5	4.5	4.5	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	10.5
6	5.0	4.5	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	11.0
7	5.0	5.0	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	11.0
8	5.0	5.0	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	11.0
9	5.0	4.5	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	11.0
10	5.0	4.5	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	11.0
11	5.0	5.0	---	---	9.0	8.5	10.0	9.5	11.0	10.5	11.0	10.5
12	5.0	5.0	---	---	9.0	8.5	9.5	9.5	11.0	10.5	11.0	10.5
13	5.0	5.0	---	---	8.5	8.5	9.5	9.5	11.0	10.5	11.0	10.5
14	5.0	5.0	---	---	8.5	8.5	10.0	9.5	11.0	10.5	11.0	10.5
15	5.0	5.0	---	---	8.5	8.5	10.0	9.5	11.0	10.5	11.0	10.5
16	5.0	5.0	7.0	7.0	8.5	8.5	10.5	10.0	11.0	10.5	11.0	11.0
17	5.5	5.0	7.0	7.0	9.0	8.5	11.0	10.5	11.0	10.5	11.0	11.0
18	5.0	5.0	7.0	7.0	9.0	8.5	11.5	11.0	11.0	10.5	11.0	11.0
19	5.5	5.0	7.0	7.0	9.0	8.5	11.5	11.0	11.0	10.5	11.0	11.0
20	5.0	5.0	8.0	7.0	9.0	9.0	11.5	10.5	11.0	10.5	11.0	11.0
21	5.5	5.0	8.0	7.0	9.0	9.0	11.0	10.5	11.0	10.5	11.0	11.0
22	5.5	5.0	8.0	7.0	9.0	9.0	11.0	10.5	11.0	10.5	11.0	11.0
23	5.5	5.0	8.0	8.0	9.0	9.0	11.0	10.5	11.0	11.0	11.5	11.0
24	5.5	5.0	8.0	7.0	9.0	9.0	10.5	10.5	11.5	11.0	11.0	11.0
25	5.5	5.5	8.0	7.0	9.0	9.0	10.5	10.0	11.5	11.0	11.5	11.0
26	5.5	5.0	8.0	7.0	9.0	9.0	10.5	10.5	11.5	11.0	11.0	11.0
27	---	---	8.5	8.0	9.0	9.0	10.5	10.0	11.0	10.5	11.0	11.0
28	---	---	8.5	8.0	9.5	9.0	11.0	10.0	11.0	10.5	11.0	11.0
29	---	---	8.5	8.0	9.5	9.0	11.0	10.0	11.0	10.5	11.0	10.5
30	---	---	8.5	8.0	9.5	9.0	11.0	10.5	11.0	10.5	11.0	10.5
31	---	---	8.5	8.0	---	---	11.0	10.5	11.0	10.5	---	---
MONTH	5.5	4.0	---	---	9.5	8.0	11.5	9.0	11.5	10.5	11.5	10.5

12091500 CHAMBERS CREEK BELOW LEACH CREEK, NEAR STEILACOOM, WASH.

LOCATION.--Lat 47°11'37", long 122°34'20", in SE¼NE¼ sec.29, T.20 N., R.2 E., Pierce County, at Chambers Creek Road bridge, 0.9 mile upstream from mouth, and 1.5 miles northeast of Steilacoom.

DRAINAGE AREA.--104 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1962 to September 1970, October 1971 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
06...	0925	45	13	6.6	7.4	1.4	71	58
28...	0915	50	13	6.2	7.1	1.6	66	54
NOV.								
04...	0925	56	11	5.6	5.7	1.7	57	47
22...	0905	50	13	5.8	7.4	1.8	65	53
DEC.								
09...	0930	100	10	4.2	5.6	1.8	45	37
22...	0930	150	11	4.9	5.9	2.0	48	39
JAN.								
05...	0915	135	12	5.0	7.5	2.1	52	43
19...	0910	300	10	4.5	5.9	1.6	46	38
FEB.								
03...	1025	150	11	4.4	6.7	1.9	46	38
16...	0910	200	10	3.9	5.9	1.4	41	34
MAR.								
08...	0945	600	9.3	3.5	5.2	2.4	38	31
22...	0850	400	11	4.0	5.7	1.4	46	38
APR.								
05...	0900	190	11	4.0	5.4	1.5	47	39
19...	0915	236	11	4.2	6.0	1.5	47	39
MAY								
03...	0900	186	10	4.3	5.2	2.1	49	40
17...	0900	135	11	4.6	6.3	1.7	54	44
JUNE								
07...	0915	106	12	4.8	5.9	1.3	53	43
21...	0830	96	12	5.1	6.4	1.5	56	46
JULY								
06...	0915	50	12	5.1	6.7	1.5	59	48
19...	0940	60	12	5.7	6.8	1.8	58	48
AUG.								
02...	0835	56	13	5.6	6.6	1.4	57	47
16...	0915	67	12	5.6	6.6	2.2	57	47
SEP.								
07...	0900	58	13	6.0	7.3	1.5	60	49
20...	0920	80	12	5.3	6.2	1.7	59	48

12091500 CHAMBERS CREEK BELOW LEACH CREEK, NEAR STEILACOOM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
06...	9.5	5.0	.15	.330	.08	.89	.010	.020	60
28...	12	6.2	.19	.000	.04	--	.010	.020	58
NOV.									
04...	11	6.0	.21	.010	.15	1.2	.050	.070	50
22...	13	6.2	.46	.020	.25	1.3	.010	.070	56
DEC.									
09...	9.8	5.5	.60	.020	.17	1.0	.010	.060	42
22...	11	5.6	.68	.010	.11	1.2	.020	.050	48
JAN.									
05...	10	7.5	.52	.010	.23	1.0	.010	.030	51
19...	9.1	5.8	.21	.010	.06	1.5	.020	.070	43
FEB.									
03...	11	7.1	.35	.010	.09	1.7	.030	.040	46
16...	9.8	6.9	.47	.010	.16	1.3	.020	.070	41
MAR.									
08...	7.8	5.4	.35	.010	.17	1.1	.020	.090	38
22...	9.8	5.1	.48	.020	.13	1.2	.000	.060	44
APR.									
05...	9.6	5.7	.60	.010	.17	1.4	.010	.14	44
19...	9.1	5.2	.20	.010	.12	.36	.010	.030	45
MAY									
03...	9.4	6.2	.60	.020	.14	.94	.000	.050	43
17...	9.2	6.1	.80	.030	.21	.93	.010	.040	46
JUNE									
07...	9.7	4.6	.55	.040	.15	.98	.020	.050	50
21...	10	6.3	1.3	.020	.29	1.1	.030	.060	51
JULY									
06...	12	5.8	.43	.020	.11	1.3	.030	.050	51
19...	15	7.0	.81	.020	.24	1.0	.020	.060	53
AUG.									
02...	11	6.0	.45	.030	.15	1.1	.030	.050	55
16...	12	6.0	.45	.010	.11	1.1	.030	.060	53
SEP.									
07...	13	6.6	.36	.010	.13	.10	.040	.050	57
20...	12	6.8	.46	.010	.23	.95	.020	.080	52

12091500 CHAMBERS CREEK BELOW LEACH CREEK, NEAR STEILACOOM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
06...	1	158	7.3	14.1	32	4	8.9	500
28...	4	160	7.5	6.1	24	2	10.1	1200
NOV.								
04...	4	135	6.9	9.7	76	5	9.4	7000
22...	3	150	7.6	8.1	21	2	10.1	1200
DEC.								
09...	5	121	7.4	6.1	88	10	11.2	3000
22...	8	128	7.4	6.1	54	6	11.3	1400
JAN.								
05...	8	140	7.5	6.1	28	4	11.6	360
19...	6	130	7.4	6.9	43	5	11.4	500
FEB.								
03...	8	135	7.2	3.5	42	3	12.5	250
16...	7	115	7.3	8.1	46	9	10.8	1000
MAR.								
08...	6	110	7.3	7.4	56	20	11.3	1100
22...	6	116	7.2	10.8	32	5	10.2	600
APR.								
05...	5	128	7.3	11.6	38	5	9.9	1500
19...	6	122	7.6	7.4	27	3	10.5	300
MAY								
03...	2	125	7.3	12.5	27	3	9.5	500
17...	2	143	7.2	13.8	29	3	8.6	2300
JUNE								
07...	6	140	7.3	16.0	16	1	8.3	2000
21...	5	151	7.3	14.6	17	3	8.4	1000
JULY								
06...	3	141	7.5	16.8	18	2	8.2	600
19...	6	151	7.5	16.3	13	1	7.7	2750
AUG.								
02...	9	163	7.5	15.7	15	2	8.2	2300
16...	6	164	7.1	15.0	28	2	7.6	<4000
SEP.								
07...	8	158	7.6	14.2	20	5	8.1	4000
20...	3	148	7.3	12.3	47	9	8.5	9000

12098500 WHITE RIVER NEAR BUCKLEY, WASH.

LOCATION.--Lat 47°09'05", long 121°57'00", in SW¼NW¼ sec.8, T.19 N., R.7 E., King County, temperature recorder at gaging station on right bank 0.4 mile upstream from Red Creek, 1.7 miles downstream from Mud Mountain Dam, 3.8 miles east of Buckley, and at mile 27.9.

DRAINAGE AREA.--401 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1971 to September 1972 (discontinued).
Sediment records: November 1971 to November 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 17.0°C Aug. 7, 8; minimum, freezing point on several days during winter months.
Sediment concentrations (November 1971 to November 1972): Maximum daily, 5,320 mg/l Aug. 15, 1972; minimum daily, 22 mg/l Nov. 1-18, 1972.
Sediment loads (November 1971 to November 1972): Maximum daily, 17,200 tons Mar. 27, 1972; minimum daily, 30 tons Nov. 17, 18, 1972.

Period of record:
Water temperatures: Maximum, 17.0°C Aug. 7, 8, 1972; minimum, freezing point on several days during 1971-72 winter months.

REMARKS.--Miscellaneous suspended sediment data published for water year 1955.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	5.0	4.5	4.5	3.5	3.5	2.0	1.0	0.0	4.0	3.5
2	---	---	5.0	4.0	3.5	3.5	3.5	1.5	1.0	0.5	3.5	3.5
3	---	---	5.5	4.5	3.5	2.0	1.5	0.0	1.0	0.5	---	3.5
4	---	---	6.0	4.0	3.5	1.5	1.5	0.0	3.0	1.0	4.5	3.5
5	---	---	4.0	3.0	4.0	1.5	3.0	1.5	4.0	3.0	5.0	4.0
6	---	---	4.0	3.0	3.5	3.0	3.5	3.0	4.0	3.5	5.0	4.0
7	---	---	4.5	4.0	3.0	1.0	3.5	1.5	4.5	3.5	5.0	3.5
8	---	---	4.5	4.0	2.0	0.0	2.0	1.5	4.0	3.5	---	4.0
9	---	---	5.5	4.5	2.0	1.5	2.0	1.0	4.0	2.0	6.0	4.5
10	---	---	5.5	5.0	2.0	---	1.0	0.5	4.5	2.0	5.5	5.0
11	---	---	6.0	5.0	2.0	1.0	3.0	1.0	4.5	4.0	5.5	4.5
12	---	---	6.0	5.0	2.0	1.5	1.5	1.0	4.5	4.0	5.5	5.0
13	---	---	5.5	4.5	2.0	1.5	1.5	1.0	4.5	3.5	5.5	4.5
14	---	---	5.5	4.5	2.0	1.5	3.0	1.5	4.0	3.0	6.5	5.0
15	---	---	5.0	4.5	2.0	1.5	3.0	1.5	4.5	3.0	6.0	5.0
16	---	---	5.5	4.5	3.5	2.0	3.0	1.5	5.0	4.5	8.0	5.0
17	---	---	5.0	3.5	3.5	3.5	3.0	0.5	4.5	4.0	8.0	5.0
18	---	---	5.0	4.0	3.5	3.5	3.0	1.0	4.0	4.0	7.0	5.5
19	---	---	6.5	5.0	3.5	3.0	3.5	3.0	5.0	4.0	6.5	5.0
20	---	---	6.5	5.5	3.0	1.0	4.0	3.5	5.0	4.5	7.0	5.0
21	---	---	5.5	4.0	1.5	1.0	4.0	3.5	5.0	4.0	6.5	5.0
22	---	---	5.0	4.0	3.0	1.5	4.0	3.5	5.0	4.0	6.5	5.5
23	---	---	4.5	3.5	2.0	1.5	4.0	2.0	5.0	3.5	6.0	4.5
24	---	---	4.5	4.0	3.0	2.0	2.0	---	4.5	3.5	5.5	4.5
25	---	---	4.5	4.0	3.0	2.0	1.5	1.0	5.0	3.5	4.5	3.0
26	6.0	5.5	5.0	4.5	3.0	1.0	1.0	0.0	4.0	3.0	4.0	3.0
27	5.5	3.5	5.0	4.5	1.0	0.0	0.0	0.0	5.5	3.5	4.5	3.5
28	3.5	2.0	5.0	4.5	0.0	0.0	0.0	0.0	5.0	4.5	6.0	3.5
29	2.0	1.5	5.0	4.5	1.0	0.0	0.0	0.0	4.5	4.0	6.5	4.0
30	3.0	2.0	5.0	4.5	1.5	0.5	0.5	0.0	---	---	7.0	4.0
31	4.5	3.0	---	---	3.0	1.5	0.5	0.0	---	---	7.0	---
MONTH	---	---	6.5	3.0	4.5	0.0	4.0	0.0	5.5	0.0	8.0	3.0

12098500 WHITE RIVER NEAR BUCKLEY, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	6.0	9.0	4.0	8.0	6.5	13.0	8.0	16.0	11.0	14.5	10.5
2	8.0	4.5	9.5	5.5	8.0	6.5	13.5	8.5	15.0	11.0	15.0	11.0
3	8.0	4.0	9.5	5.5	8.5	6.5	13.5	9.0	16.0	10.5	15.0	11.5
4	8.0	5.5	9.5	6.0	8.5	8.0	14.0	8.5	16.0	11.5	15.0	11.5
5	8.0	6.0	10.0	6.0	9.0	8.0	14.0	9.0	16.0	11.0	15.0	11.0
6	6.5	5.5	9.5	5.5	9.5	8.5	13.5	8.5	16.5	11.5	11.0	10.0
7	6.0	4.5	8.0	5.5	9.5	8.5	13.0	8.5	17.0	11.5	12.0	10.5
8	4.5	3.5	7.0	5.0	9.0	8.5	11.5	9.0	17.0	11.5	13.0	10.5
9	6.0	3.0	6.5	5.0	9.0	8.0	10.0	7.0	15.5	11.0	11.0	10.0
10	5.5	3.0	9.5	5.0	8.0	8.0	---	---	15.5	10.0	12.0	10.0
11	5.0	3.0	10.0	5.5	8.0	7.0	10.0	9.0	14.5	10.0	12.0	10.0
12	4.5	3.5	11.0	5.5	8.0	7.0	11.0	9.5	13.5	11.0	13.0	10.0
13	5.5	3.0	10.5	6.0	8.0	8.0	11.5	10.0	14.0	10.0	13.5	10.5
14	5.0	4.0	10.0	5.5	9.0	8.0	14.5	9.5	14.0	10.0	14.0	11.0
15	5.5	4.0	10.0	5.5	9.5	9.0	15.0	9.5	13.0	11.0	13.5	11.0
16	4.5	2.0	8.0	5.5	9.5	9.0	15.5	10.0	11.5	10.5	13.0	11.5
17	4.0	1.5	8.0	5.5	9.5	9.0	15.5	10.0	13.0	10.5	12.0	10.5
18	5.0	2.0	8.0	5.0	9.5	9.0	15.5	10.0	13.5	9.5	11.0	9.0
19	4.5	1.5	10.5	5.0	10.0	9.5	14.5	10.0	13.5	11.0	10.0	9.0
20	5.0	3.5	10.5	6.0	10.0	9.5	13.5	9.5	13.5	11.0	9.5	8.5
21	5.0	2.0	9.5	6.0	9.5	9.0	15.0	---	15.0	11.5	10.0	9.5
22	5.5	1.0	8.0	5.5	9.5	8.5	15.0	10.0	13.5	11.0	9.5	---
23	5.5	3.0	8.0	5.0	9.0	8.5	15.0	10.0	14.5	9.0	---	---
24	7.0	4.5	6.5	5.0	8.5	8.0	14.5	10.0	15.0	11.5	---	---
25	5.5	4.0	10.0	5.0	8.5	8.0	15.0	10.0	15.0	10.0	8.0	7.0
26	8.5	4.0	11.0	5.5	8.5	8.0	15.0	11.0	15.5	11.5	8.0	7.0
27	10.0	5.0	11.5	6.0	10.0	8.0	15.5	10.5	16.5	12.0	8.0	7.0
28	9.0	4.5	11.5	6.5	13.0	9.0	15.5	10.5	16.5	12.0	8.0	7.0
29	5.0	3.0	11.5	6.0	13.5	9.0	15.5	10.5	16.0	11.5	8.5	8.0
30	6.0	3.0	10.0	6.5	13.5	9.0	15.5	10.5	15.0	11.0	10.5	8.5
31	---	---	9.0	6.5	---	---	16.0	11.0	14.0	10.0	---	---
MONTH	10.0	1.0	11.5	4.0	13.5	6.5	16.0	7.0	17.0	9.0	15.0	7.0

12098500 WHITE RIVER NEAR BUCKLEY, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, NOVEMBER 1971 TO NOVEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1				--	--	--	942	2040	5190
2				--	--	--	848	1650	3780
3				--	--	--	781	1260	2660
4				--	--	--	762	1260	2590
5				--	--	--	1940	673	3530
6				--	--	--	2660	100	718
7				--	--	--	1900	100	513
8				--	--	--	1500	100	405
9				--	--	--	3950	100	1070
10				--	--	--	2790	100	753
11				--	--	--	2530	100	683
12				--	--	--	1800	100	486
13				--	--	--	1510	100	408
14				--	--	--	1540	100	416
15				--	--	--	1310	100	354
16				--	--	--	1150	100	311
17				907	514	1260	1570	116	492
18				823	514	1140	1860	176	884
19				796	514	1100	1730	236	1100
20				833	514	1160	1570	296	1250
21				809	514	1120	1370	256	947
22				881	514	1220	1260	416	1420
23				803	514	1110	1130	747	2280
24				1020	514	1420	1030	599	1670
25				1010	514	1400	972	451	1180
26				1090	770	2270	894	302	729
27				1190	1020	3280	782	213	450
28				1170	1280	4040	733	124	245
29				1340	1530	5540	733	35	69
30				1130	1780	5430	690	35	65
31				--	--	--	821	35	78
TOTAL				13802	--	31490	45058	--	36726

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	876	56	132	760	688	1410	7780	204	4290
2	936	56	142	738	688	1370	7510	204	4140
3	1120	56	169	716	688	1330	2780	150	1130
4	1090	1270	3740	690	688	1280	3400	200	1840
5	960	1270	3290	685	688	1270	4470	190	2290
6	960	1270	3290	722	688	1340	8680	184	4310
7	978	1270	3350	906	688	1680	5170	170	2370
8	942	1270	3230	1170	688	2170	3090	80	667
9	1090	1270	3740	1530	1710	7060	3590	39	378
10	978	720	1900	1260	1710	5820	3460	39	364
11	1920	170	881	1220	1710	5630	3970	39	418
12	2470	170	1130	1360	1710	6280	4510	39	475
13	1410	170	647	2880	267	2080	5790	39	610
14	1200	170	551	2390	267	1720	5880	39	619
15	1040	170	477	2360	267	1700	4310	39	454
16	960	170	441	3730	1110	11200	4120	39	434
17	1090	100	294	3940	560	5960	4470	39	471
18	1010	34	93	3980	80	860	4550	39	479
19	1950	200	1050	3940	60	638	4230	39	445
20	4600	368	4570	3860	60	625	3670	39	386
21	7970	290	6240	3590	60	582	3220	39	339
22	4160	170	1910	3010	120	975	3170	39	334
23	2950	49	390	2000	1830	9880	3260	39	343
24	1770	47	225	1700	1770	8120	2970	39	313
25	1980	400	2140	1500	1320	5350	2690	39	283
26	1600	250	1080	1360	1180	4330	2320	550	3450
27	1170	1500	4740	2550	820	5650	2020	3150	17200
28	1050	1170	3320	4340	210	2460	1830	2670	13200
29	996	1000	2690	6670	204	3670	1670	2200	9920
30	984	900	2390	--	--	--	1610	1750	7610
31	972	850	2230	--	--	--	1570	450	1910
TOTAL	53182	--	60472	65557	--	102440	121760	--	81472

12098500 WHITE RIVER NEAR BUCKLEY, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, NOVEMBER 1971 TO NOVEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1890	140	714	1610	770	3350	4140	130	1450
2	2140	120	693	1590	680	2920	3870	105	1100
3	2080	100	562	1430	650	2510	3870	90	940
4	2000	80	432	1660	630	2820	3870	75	784
5	2300	80	497	2680	580	4200	3870	60	627
6	2820	70	533	2970	390	3130	3880	44	461
7	2820	30	228	3100	170	1420	3910	54	570
8	2570	30	208	3260	70	616	3940	64	681
9	2120	1650	9440	3230	37	323	4000	73	788
10	1930	1050	5470	2920	34	268	4080	69	760
11	1800	550	2670	2760	31	231	4110	65	721
12	1710	400	1850	2820	29	221	4110	61	677
13	1580	300	1280	3450	40	373	4090	52	574
14	1520	250	1030	4390	51	605	4060	44	482
15	1630	200	880	4420	62	740	4050	35	383
16	1570	200	848	4400	72	855	4020	27	293
17	1520	700	2870	4060	57	625	3970	27	289
18	1400	500	1890	3690	42	418	3900	26	274
19	1330	500	1800	3190	28	241	3040	25	205
20	1300	600	2110	3120	31	261	3810	25	257
21	1350	650	2370	3810	34	350	3740	32	323
22	1270	650	2230	4090	37	409	3630	38	372
23	1240	700	2340	3850	40	416	3500	45	425
24	1300	750	2630	3350	54	488	3480	42	395
25	1380	850	3170	2950	67	534	3480	40	376
26	1340	850	3080	2760	80	596	3370	38	346
27	1460	900	3550	2800	80	605	3230	36	314
28	2120	1300	7440	3640	130	1280	3130	42	355
29	2010	1000	5430	4390	290	3440	3100	49	410
30	1750	850	4020	4350	275	3230	3110	57	479
31	--	--	--	4400	180	2140	--	--	--
TOTAL	53250	—	72265	101140	--	39615	112360	--	16111

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3100	190	1590	1610	341	1480	812	162	355
2	3030	190	1550	1510	341	1390	790	174	371
3	2950	190	1510	1440	341	1330	795	187	401
4	2940	190	1510	1470	341	1350	824	199	443
5	2970	190	1520	1490	341	1370	830	212	475
6	3040	190	1560	1460	341	1340	770	188	391
7	3090	190	1590	1440	1960	7620	725	163	319
8	3000	190	1540	1450	3380	13200	755	139	283
9	2550	190	1310	1460	2900	11400	854	114	263
10	1830	190	939	1410	2410	9170	785	90	191
11	2470	190	1270	1290	2990	10400	670	65	118
12	2620	190	1340	1150	3570	11100	625	41	69
13	3620	190	1860	1080	4150	12100	610	45	74
14	3440	190	1760	1040	4730	13300	605	50	82
15	2970	190	1520	1000	5320	14400	610	55	91
16	2790	190	1430	1070	560	1620	625	60	101
17	2720	190	1400	1080	560	1630	705	65	124
18	2620	190	1340	956	560	1450	645	70	122
19	2400	190	1230	962	560	1450	700	74	140
20	2240	190	1150	986	560	1490	878	82	194
21	2090	190	1070	959	560	1450	1890	89	454
22	2010	190	1030	1010	560	1530	824	96	214
23	1970	190	1010	879	560	1330	188	103	52
24	1900	190	975	962	560	1450	203	110	60
25	1790	190	918	947	560	1430	542	117	171
26	1750	190	898	968	560	1460	1080	124	362
27	1730	190	887	1020	560	1540	1550	108	452
28	1690	190	867	1080	560	1630	1830	93	460
29	1710	190	877	1090	560	1650	1660	77	345
30	1630	190	836	1010	560	1530	1360	62	228
31	1590	190	816	878	560	1330	--	--	--
TOTAL	76250	—	39103	36157	--	134920	25740	--	7405

12098500 WHITE RIVER NEAR BUCKLEY, WASH.--Continued

SUSPENDED-SEDIMENT DISCHARGE, NOVEMBER 1971 TO NOVEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	587	34	54	522	22	31			
2	435	34	40	888	22	53			
3	341	34	31	741	22	44			
4	571	34	52	863	22	51			
5	582	34	53	1080	22	64			
6	904	34	83	883	22	52			
7	769	34	71	821	22	49			
8	569	34	52	751	22	45			
9	635	34	58	745	22	44			
10	651	34	60	738	22	44			
11	568	34	52	674	22	40			
12	534	34	49	626	22	37			
13	525	34	48	594	22	35			
14	512	34	47	567	22	34			
15	500	34	46	543	22	32			
16	489	34	45	526	22	31			
17	480	34	44	512	22	30			
18	471	34	43	505	22	30			
19	465	34	43						
20	458	34	42						
21	472	34	43						
22	462	34	42						
23	458	34	42						
24	445	34	41						
25	476	34	44						
26	561	34	51						
27	489	34	45						
28	495	34	45						
29	486	34	45						
30	457	34	42						
31	450	34	41						
TOTAL	16297	--	1494	12579	--	746			

12101110 WHITE RIVER AT SUMNER, WASH.

LOCATION.--Lat 47°12'15", long 122°14'40", in NW¼SW¼ sec.24, T.20 N., R.4 E., Pierce County, at Main Street bridge, 500 ft west of Sumner city limits.

DRAINAGE AREA.--494 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
06...	1140	--	6.6	1.3	4.6	.5	27	22
28...	1135	--	7.4	1.2	5.3	2.3	34	28
NOV.								
04...	1200	4290	7.4	1.6	4.5	1.2	32	26
22...	1125	2600	6.4	1.3	3.9	1.9	30	25
DEC.								
09...	1200	5820	5.2	1.2	3.4	1.5	20	16
22...	1210	2890	6.4	1.6	4.0	1.8	26	21
JAN.								
05...	1145	2360	6.5	1.4	5.2	1.1	26	21
19...	1140	--	6.3	1.6	3.8	1.3	26	21
FEB.								
03...	1300	3600	6.2	1.3	3.8	1.6	27	22
16...	1140	8080	5.8	1.3	3.5	1.5	24	20
MAR.								
08...	1300	5060	4.8	1.0	2.7	.6	23	19
22...	1145	4150	4.8	1.0	2.8	.7	26	21
APR.								
05...	1145	3600	5.1	1.2	3.1	1.1	23	19
19...	1140	2580	5.7	1.1	3.4	.8	23	19
MAY								
03...	1140	2650	6.0	1.3	3.2	1.3	28	23
17...	1200	4820	4.8	.9	2.8	.9	24	20
JUNE								
07...	1140	4920	4.5	.8	2.9	.8	24	20
21...	1110	--	4.3	.9	2.9	.9	24	20
JULY								
06...	1210	3800	4.7	.8	3.0	1.0	20	16
19...	1245	3690	4.7	.9	2.6	.6	21	17
AUG.								
02...	1230	2540	5.4	.9	2.9	.8	23	19
16...	1230	1820	6.4	1.3	4.5	1.1	28	23
SEP.								
07...	1200	2580	5.5	1.2	4.3	.8	24	20
20...	1210	2120	6.5	1.0	4.2	.9	25	21

12101110 WHITE RIVER AT SUMNER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
06...	9.3	2.2	.14	.000	.05	.02	.000	.030	22
28...	9.8	2.7	--	.010	.44	.01	.010	.030	23
NOV.									
04...	9.3	3.2	--	.010	.09	.24	.030	.11	25
22...	9.0	3.4	.31	.000	.07	.21	.010	.030	21
DEC.									
09...	7.2	2.1	.79	.000	.44	.34	.020	.65	18
22...	7.8	2.4	.34	.010	.06	1.0	.040	.040	23
JAN.									
05...	7.2	2.9	--	.000	.09	.29	.010	.010	22
19...	6.5	2.4	.18	.000	.08	.79	.020	.070	22
FEB.									
03...	8.8	2.4	.35	.000	.14	.63	.010	.030	21
16...	6.3	3.2	.58	.010	.27	.82	.040	.19	20
MAR.									
08...	--	1.0	.14	.000	.14	.22	.010	.070	16
22...	5.0	1.0	.12	.010	.08	.17	.000	.070	16
APR.									
05...	6.8	2.8	.45	.000	.14	.25	.020	.070	18
19...	5.3	1.8	.49	.010	.18	.09	.040	.050	19
MAY									
03...	6.4	2.8	.74	.010	.21	.13	.010	.040	20
17...	4.2	2.1	.84	.000	.19	.08	.010	.070	16
JUNE									
07...	4.1	.9	.43	.010	.16	.06	.010	.010	15
21...	5.8	1.3	.40	.000	.15	.04	.010	.050	14
JULY									
06...	5.2	1.9	.34	.010	.18	.04	.020	.10	15
19...	8.0	1.0	--	--	--	--	--	--	15
AUG.									
02...	6.2	2.0	.44	.020	.20	.07	.060	.070	17
16...	8.6	2.5	.41	.000	.04	.09	.020	.13	21
SEP.									
07...	6.6	2.0	.41	.000	.18	.02	.020	.020	19
20...	7.5	2.2	.46	.000	.19	.03	.11	.13	20

12101110 WHITE RIVER AT SUMNER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
06...	0	69	6.9	14.2	29	20	9.5	1600
28...	0	84	7.1	9.1	48	4	10.4	1700
NOV.								
04...	0	79	7.1	8.4	86	40	10.5	9000
22...	0	70	7.2	7.2	30	5	11.1	1000
DEC.								
09...	2	59	7.1	4.5	98	120	12.2	7000
22...	1	67	7.1	4.8	47	5	11.9	6000
JAN.								
05...	1	64	7.3	4.3	30	4	12.6	1400
19...	1	71	7.2	4.6	43	7	12.1	3000
FEB.								
03...	0	73	7.3	2.3	46	9	13.0	14000
16...	0	62	7.0	6.1	60	50	11.5	8000
MAR.								
08...	0	53	7.0	--	43	20	12.0	2700
22...	0	50	7.0	7.4	26	9	11.7	350
APR.								
05...	0	61	7.2	9.9	29	6	10.8	2000
19...	0	56	7.4	9.1	23	3	11.2	300
MAY								
03...	0	65	7.3	11.9	22	6	11.0	4000
17...	0	50	7.1	8.5	27	20	11.3	1000
JUNE								
07...	0	46	7.3	10.9	28	27	10.6	9000
21...	0	48	7.1	12.6	18	8	10.0	360
JULY								
06...	0	46	7.0	13.6	27	8	10.1	1600
19...	0	47	7.3	16.2	23	38	8.7	2750
AUG.								
02...	0	55	7.3	17.0	22	20	8.8	4000
16...	0	79	6.9	14.4	46	29	10.1	2500
SEP.								
07...	0	60	7.3	17.4	42	15	8.5	8000
20...	0	68	7.2	14.7	33	20	9.2	4600

12101500 PUYALLUP RIVER AT PUYALLUP, WASH.

LOCATION.--Lat 47°12'52", long 122°20'25", in SE¼SE¼ sec.18, T.20 N., R.4 E., Pierce County, at Clark Creek bridge 0.8 mile downstream from gaging station, 2.8 miles northwest of Puyallup City Hall, and at mile 5.8.

DRAINAGE AREA.--948 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to February 1968, November 1970 to September 1972 (discontinued). March 1968 to September 1970, at site 2.5 miles upstream, published as 12101475.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
06...	1005	796	8.4	2.6	4.5	1.6	38	31	8.5	4.7	.11
28...	1000	2890	8.3	2.0	4.1	1.3	36	30	2.5	2.4	--
NOV.											
04...	1010	7990	12	3.4	4.0	1.8	26	21	4.8	2.6	--
22...	0945	2740	8.4	2.2	4.6	1.5	38	31	5.3	3.8	.52
DEC.											
09...	1010	10400	5.2	1.3	2.9	1.4	20	16	5.2	1.9	.68
22...	1020	4640	6.8	1.9	3.7	1.6	28	23	7.8	2.1	.40
JAN.											
05...	0950	3160	6.4	1.6	3.9	1.2	29	24	7.2	3.3	.21
19...	0945	5740	6.3	2.0	3.2	1.6	26	21	4.9	2.1	.24
FEB.											
03...	1110	3160	6.7	1.8	3.5	1.0	30	25	7.7	1.9	.30
16...	1010	9880	4.7	1.3	2.8	.8	22	18	4.0	2.2	.42
MAR.											
08...	1045	10000	4.7	1.1	2.7	.6	24	20	--	1.1	.14
22...	0950	7050	5.2	1.2	3.4	.8	29	24	5.2	1.0	.16
APR.											
05...	0950	5090	5.5	1.5	3.4	1.1	27	22	5.1	2.6	.53
19...	1010	3440	6.3	1.7	3.4	.8	30	25	5.3	1.4	.05
MAY											
03...	1000	3870	6.7	1.6	2.8	1.3	32	26	5.2	1.9	.41
17...	1010	7740	4.2	1.0	2.9	.7	25	21	3.4	2.0	.25
JUNE											
07...	1010	7860	5.1	1.0	2.5	.5	19	16	3.9	.7	.18
21...	0915	5200	5.5	1.2	2.7	.7	25	21	5.1	1.8	.36
JULY											
06...	1015	6350	5.7	1.3	2.7	.7	19	16	4.7	.9	.22
19...	1035	5850	6.0	1.5	3.0	.7	22	18	7.9	1.0	.24
AUG.											
02...	0920	2400	6.6	2.0	3.2	.8	24	20	5.4	2.0	.11
16...	1000	2310	7.4	1.6	3.6	.8	28	23	7.9	2.2	.22
SEP.											
07...	0945	1520	9.2	2.7	5.6	2.3	38	31	9.6	3.4	.73
20...	1000	2190	8.4	2.2	4.7	1.2	37	30	8.6	2.2	.36

12101500 PUYALLUP RIVER AT PUYALLUP, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
06...	.010	.05	.08	.010	.030	32	1	86	6.2	12.8
28...	.010	.02	.01	.010	.050	29	0	80	7.2	5.5
NOV.										
04...	.010	.40	.22	.010	--	44	23	54	7.1	7.5
22...	.010	.24	.55	.010	.060	30	0	90	7.2	5.6
DEC.										
09...	.010	.29	.58	.010	.25	18	2	53	7.4	4.3
22...	.010	.06	.98	.030	.030	25	2	71	7.5	4.5
JAN.										
05...	.000	.09	.33	.010	.020	23	0	70	7.5	4.0
19...	.010	.09	.94	.020	.080	24	3	66	7.3	5.4
FEB.										
03...	.000	.10	1.0	.020	.020	24	0	76	7.3	1.6
16...	.010	.20	.62	.040	.10	17	0	51	7.3	6.3
MAR.										
08...	.010	.12	.30	.010	.060	16	0	49	7.0	4.9
22...	.010	.09	.19	.010	.040	18	0	53	7.1	7.6
APR.										
05...	.010	.16	.29	.020	.060	20	0	68	7.4	8.9
19...	.010	.05	.14	.010	.040	23	0	63	7.4	7.2
MAY										
03...	.010	.12	.12	.010	.040	23	0	66	7.1	10.0
17...	.000	.10	.10	.010	.040	14	0	49	7.2	8.8
JUNE										
07...	.010	.11	.10	.000	.060	17	1	43	7.3	10.2
21...	.000	.15	.07	.010	.050	19	0	52	7.2	10.8
JULY										
06...	.010	.22	.11	.030	.13	20	4	46	7.3	12.3
19...	.000	.21	.04	.020	.18	21	3	50	7.3	14.4
AUG.										
02...	.020	.34	.07	.010	.42	25	5	59	7.3	13.0
16...	.000	.06	.11	.030	.12	25	2	70	7.2	12.0
SEP.										
07...	.020	.24	.14	.050	.13	34	3	95	7.1	12.1
20...	.000	.23	.10	.010	.080	30	0	86	7.3	11.4

12101500 PUYALLUP RIVER AT PUYALLUP, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
06...	52	35	9.8	1600	--	--	--	--	--	--
28...	42	6	11.8	4000	5	--	20	680	8.1	30
NOV.										
04...	128	190	11.1	6000	16	--	350	170	2.7	40
22...	46	5	11.7	16000	11	--	0	0	.1	60
DEC.										
09...	142	60	12.2	8000	4	--	9	80	3.2	20
22...	54	5	12.0	4000	0	--	10	96	6.3	30
JAN.										
05...	30	3	13.3	1500	7	--	1	1	.7	80
19...	63	15	12.0	2500	--	0	4	1	.3	20
FEB.										
03...	36	5	13.6	4000	--	0	3	4	.4	20
16...	66	25	11.6	1600	--	0	3	2	.3	8
MAR.										
08...	--	15	12.2	1700	--	0	4	57	.8	0
22...	33	9	11.5	750	--	0	3	5	.1	7
APR.										
05...	33	5	11.1	2500	--	0	1	0	.0	7
19...	26	2	11.6	1900	--	0	1	2	.4	8
MAY										
03...	23	4	10.9	4000	--	0	1	4	.2	20
17...	28	16	11.4	1100	--	0	2	3	.0	0
JUNE										
07...	27	22	10.8	1600	--	0	2	6	.1	20
21...	19	13	10.8	270	--	0	2	0	.1	30
JULY										
06...	34	40	10.4	1400	--	0	10	50	3.0	20
19...	31	43	9.3	3000	--	0	6	1	.1	20
AUG.										
02...	40	57	8.6	4400	--	0	4	0	.2	0
16...	30	26	10.0	4000	--	0	2	3	.2	10
SEP.										
07...	61	27	9.3	12000	--	0	80	1	.3	70
20...	42	19	9.1	16000	--	0	10	4	.7	10

12107290 WALKER LAKE NEAR CUMBERLAND, WASH.

LOCATION.--Lat 47°15'47", long 121°54'25", in NW¼SW¼ sec.34, T.21 N., R.7 E., King County, 1.7 miles southeast of Cumberland.

DRAINAGE AREA.--0.49 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
03...	1240	3.0	4.2	2.7	10	25	2.6	.5	1.5
03...	1245	46	3.5	2.9	20	--	--	--	--
MAY									
09...	1110	3.0	11.7	3.1	60	0	--	--	--
09...	1120	45	4.5	4.3	210	40	--	--	--
JUNE									
26...	1340	3.0	15.1	.6	60	20	--	--	--
26...	1350	44	4.8	4.2	130	0	--	--	--
OCT.									
13...	1230	3.0	12.2	.9	50	0	3.1	.7	1.6
13...	1235	43	5.0	4.6	800	130	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
03...	.4	17	14	.0	1.0	.1	.36	.000	.11
03...	--	17	14	--	--	--	.37	.000	.12
MAY									
09...	--	18	15	--	--	--	.43	.010	.22
09...	--	17	14	--	--	--	.56	--	.41
JUNE									
26...	--	18	15	--	--	--	.31	.000	.05
26...	--	18	15	--	--	--	.38	.020	.20
OCT.									
13...	.4	14	11	1.6	1.4	--	--	--	--
13...	--	18	15	--	--	--	--	--	--

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
03...	.24	.000	.020	39	17	9	0	31	9
03...	.24	.000	.010	--	--	--	--	30	--
MAY									
09...	.25	.000	.020	--	--	--	--	31	--
09...	.18	.000	.030	--	--	--	--	36	--
JUNE									
26...	.06	.000	.020	--	--	--	--	30	--
26...	.25	.000	.040	--	--	--	--	35	--
OCT.									
13...	--	--	--	--	17	11	0	27	17
13...	--	--	--	--	--	--	--	48	--

12113000 GREEN RIVER NEAR AUBURN, WASH.

LOCATION.--Lat 47°18'45", long 122°12'10", in NW¼NW¼ sec.17, T.21 N., R.5 E., King County, temperature recorder at gaging station on left bank, 1.2 miles east of Auburn, 1.8 miles downstream from Big Soos Creek, and at mile 32.0.

DRAINAGE AREA.--399 sq mi, excluding 3.67 sq mi in the vicinity of Youngs Lake.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1970.
Water temperatures: March 1952 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 20.0°C Aug. 7, 8; minimum, 2.0°C Jan. 26-28.

Period of record:
Water temperatures: Maximum, 24.0°C July 28, 1958; minimum, 0.5°C Feb. 16, 17, 1956, Dec. 18-21, 1964.

TEMPERATURES (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	11.0	6.5	6.0	5.5	5.5	4.0	3.5	3.0	3.0	5.5	5.0
2	13.5	11.0	6.0	6.0	5.5	5.5	4.0	3.5	3.0	3.0	5.0	5.0
3	13.5	12.0	6.5	6.0	5.5	5.0	3.5	3.0	3.0	3.0	5.0	4.5
4	15.0	13.0	6.5	6.0	5.0	5.0	3.0	3.0	3.5	3.0	5.0	5.0
5	15.0	13.5	6.0	5.5	5.0	5.0	3.5	3.0	4.0	3.5	5.5	5.0
6	14.0	13.0	5.5	5.5	5.0	4.5	4.0	3.5	4.0	4.0	5.5	5.5
7	13.0	13.0	5.5	5.5	4.5	4.0	4.0	4.0	4.5	4.0	5.5	5.0
8	13.0	13.0	5.5	5.5	4.0	4.0	4.0	4.0	4.5	4.5	5.5	5.5
9	14.0	12.0	6.0	5.5	4.0	3.5	4.0	4.0	4.5	4.5	6.0	5.5
10	14.0	13.0	6.5	6.0	3.5	3.5	4.0	3.5	4.5	4.5	6.5	6.0
11	13.5	13.0	7.0	6.5	3.5	3.5	3.5	3.5	5.0	4.5	6.5	6.5
12	13.0	11.5	7.0	7.0	4.0	3.5	3.5	3.5	5.0	5.0	6.5	6.5
13	13.0	11.5	7.0	7.0	4.0	3.5	3.5	3.5	5.0	4.5	6.5	6.5
14	11.5	11.0	7.0	7.0	3.5	3.5	3.5	3.5	4.5	4.5	6.5	6.5
15	11.0	10.0	7.0	6.5	3.5	3.5	4.0	3.5	4.5	4.5	6.5	6.5
16	10.5	9.0	6.5	6.5	4.0	3.5	4.0	4.0	5.0	4.5	7.0	6.5
17	9.5	8.5	6.5	5.5	4.5	4.0	4.0	4.0	5.0	4.5	7.0	7.0
18	9.5	8.5	5.5	5.5	4.5	4.0	4.0	3.5	5.0	4.5	7.0	7.0
19	9.5	9.5	6.5	5.5	4.0	4.0	4.0	3.5	5.0	5.0	7.0	6.5
20	10.0	9.5	6.5	6.5	4.0	4.0	4.0	4.0	5.0	5.0	6.5	6.5
21	9.5	9.5	6.5	6.5	4.0	3.5	4.0	4.0	5.0	5.0	6.5	6.5
22	9.5	9.5	6.5	5.5	3.5	3.5	4.0	4.0	5.0	5.0	6.5	6.5
23	9.5	9.5	5.5	5.5	3.5	3.5	4.0	4.0	5.5	5.0	6.5	6.0
24	9.5	9.5	5.5	5.5	4.0	3.5	4.0	3.5	5.5	5.5	6.0	6.0
25	9.5	9.5	5.5	5.5	4.0	4.0	3.5	3.0	5.5	5.5	6.0	5.5
26	9.5	9.0	5.5	5.5	4.0	3.5	3.0	2.0	5.5	5.0	5.5	5.5
27	9.0	8.0	5.5	5.5	3.5	3.5	2.0	2.0	5.5	5.0	5.5	5.5
28	8.0	7.0	5.5	5.5	3.5	3.0	3.0	2.0	6.0	5.5	6.0	5.5
29	7.0	6.5	5.5	5.5	3.0	3.0	3.0	3.0	6.0	5.5	7.0	5.5
30	6.5	6.5	5.5	5.5	3.0	3.0	3.0	3.0	---	---	7.0	6.0
31	6.5	6.5	---	---	3.5	3.0	3.0	3.0	---	---	7.0	6.5
MONTH	15.0	6.5	7.0	5.5	5.5	3.0	4.0	2.0	6.0	3.0	7.0	4.5

12113000 GREEN RIVER NEAR AUBURN, WASH.--Continued

TEMPERATURES (°C) OF WATER. WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	7.0	9.0	6.5	10.5	10.0	13.5	10.5	18.0	15.5	16.5	14.0
2	8.0	6.5	11.0	8.5	12.0	9.5	14.0	11.0	15.5	14.5	17.0	14.0
3	7.0	5.5	11.5	9.5	13.5	10.5	14.5	11.0	18.0	14.0	17.0	14.5
4	8.0	7.0	11.5	9.5	12.0	10.5	15.5	13.0	18.5	15.0	17.0	15.0
5	8.0	7.0	11.5	10.0	13.0	11.0	15.5	13.0	19.0	15.0	16.0	15.0
6	8.0	7.0	10.0	9.0	13.5	11.0	15.0	13.5	19.5	15.5	15.0	14.0
7	7.0	6.5	9.0	9.0	11.5	11.0	14.0	12.0	20.0	16.0	15.0	14.0
8	6.5	6.0	9.0	8.5	13.0	10.5	14.0	13.0	20.0	16.5	15.0	14.0
9	6.5	6.0	8.5	8.5	12.0	11.0	13.5	12.0	19.5	16.0	14.0	13.0
10	7.0	6.5	9.5	8.5	11.0	10.5	13.0	11.5	19.5	15.0	14.5	13.5
11	7.0	6.5	10.0	9.5	11.0	10.0	13.0	12.0	18.5	15.0	14.5	13.0
12	7.0	6.5	10.5	10.0	11.0	10.5	13.0	13.0	18.0	14.5	15.0	13.0
13	7.0	6.0	10.5	10.5	14.5	11.0	13.0	13.0	17.0	14.0	15.0	13.0
14	7.0	7.0	10.5	10.0	14.5	12.0	15.0	12.0	17.0	14.0	15.5	13.5
15	8.0	7.0	10.0	9.0	12.0	11.5	15.5	13.0	15.5	14.5	15.5	13.5
16	8.0	6.0	9.0	9.0	13.5	11.0	15.5	13.5	15.5	14.0	15.0	14.0
17	7.0	6.0	9.0	8.5	14.5	11.5	16.0	13.5	15.5	14.5	14.0	13.5
18	6.5	6.0	8.5	8.0	15.5	12.0	15.5	14.0	17.0	14.5	14.0	13.0
19	6.5	6.0	10.0	8.5	16.5	12.0	16.0	13.5	17.0	14.5	14.0	12.0
20	7.0	6.5	11.0	10.0	16.5	13.5	16.0	14.0	16.0	14.5	12.0	12.0
21	8.5	7.0	10.5	9.0	13.5	12.0	16.0	14.0	15.0	14.5	13.0	12.0
22	9.0	6.5	9.0	8.5	12.0	11.5	16.0	14.0	16.0	15.0	13.0	12.0
23	8.5	7.0	8.5	8.5	11.5	11.0	16.0	14.0	17.0	14.5	12.0	11.5
24	9.0	8.5	8.5	8.0	11.0	11.0	14.5	14.0	18.0	15.0	11.5	11.5
25	9.0	8.0	9.5	8.0	11.0	11.0	15.5	13.5	18.5	15.0	11.5	10.5
26	9.5	7.0	11.5	9.5	11.0	10.5	15.5	14.0	18.5	15.0	11.0	10.0
27	11.5	8.5	12.0	11.0	11.0	10.5	16.0	13.5	19.0	15.0	10.5	10.0
28	10.5	8.0	11.5	11.5	13.5	10.5	18.0	14.0	19.0	15.5	10.5	10.0
29	8.0	7.0	11.5	10.5	13.5	11.0	18.0	14.5	19.0	15.0	11.5	10.0
30	8.0	6.5	14.5	10.5	13.5	11.0	18.0	14.5	18.5	14.5	12.0	10.5
31	---	---	14.5	10.0	---	---	18.5	14.5	17.0	14.0	---	---
MONTH	11.5	5.5	14.5	6.5	16.5	9.5	18.5	10.5	20.0	14.0	17.0	10.0

12117500 CEDAR RIVER NEAR LANDSBURG, WASH.

LOCATION.--Lat 47°23'38", long 121°57'12", on west line NW¼SW¼ sec.17, T.22 N., R.7 E., King County, temperature recorder at gaging station on left bank, 1.8 miles upstream from intake of Seattle water-supply system near Landsburg, 4.0 miles east of Maple Valley, 5.9 miles downstream from Taylor Creek and at mile 23.4.

DRAINAGE AREA.--122 sq mi, includes Rock Creek drainage upstream from Walsh Lake Diversion.

PERIOD OF RECORD.--Chemical analyses: July 1959 to July 1961.
Water temperatures: August 1953 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum recorded, 17.0°C Aug. 5, 6; minimum, 3.5°C several days in January and February.

Period of record:
Water temperatures: Maximum, 19.5°C July 27, 28, 1960, July 13, 1961; minimum, 2.0°C on several days during January and February in 1956, 1957, and 1960 and January 1971.

REMARKS.--Recorder not operating July 3-10 (no range in temperature obtained).

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	10.5	8.5	8.5	6.5	6.0	4.5	4.5	4.0	3.5	5.5	5.5
2	11.0	10.5	8.5	8.5	6.0	6.0	4.5	4.0	4.0	3.5	5.5	5.5
3	11.0	10.5	8.5	8.5	6.0	6.0	4.0	3.5	4.5	3.5	5.5	5.5
4	11.0	11.0	8.5	8.0	6.0	6.0	4.5	3.5	5.0	4.5	5.5	5.5
5	11.0	10.5	8.0	7.0	6.0	6.0	4.5	4.0	4.5	4.5	6.0	5.5
6	11.0	10.5	7.0	7.0	6.0	5.5	4.0	4.0	4.5	4.5	6.5	6.0
7	11.0	10.5	7.0	7.0	5.5	5.5	4.0	4.0	4.5	4.5	6.5	6.0
8	11.0	10.5	7.0	7.0	5.5	4.5	4.0	4.0	4.5	4.5	6.5	6.0
9	11.0	10.5	7.0	7.0	4.5	4.5	4.0	4.0	5.0	4.5	6.5	6.5
10	11.0	11.0	7.0	7.0	4.5	4.5	4.0	3.5	5.0	4.5	6.5	6.5
11	11.0	11.0	8.0	7.0	4.5	4.5	4.0	3.5	5.0	5.0	6.5	6.5
12	11.0	10.5	8.0	8.0	4.5	4.5	3.5	3.5	5.0	5.0	7.0	6.5
13	11.0	11.0	8.0	8.0	4.5	4.5	3.5	3.5	5.0	4.5	6.5	6.5
14	11.0	11.0	8.0	7.0	5.0	4.0	4.0	3.5	5.0	4.5	6.5	6.5
15	11.0	10.0	7.0	7.0	4.5	4.5	4.0	4.0	5.0	5.0	6.5	6.5
16	10.0	10.0	7.0	7.0	4.5	4.5	4.0	4.0	5.0	4.5	6.5	6.5
17	10.0	9.5	7.0	7.0	4.5	4.5	4.0	4.0	5.0	4.5	6.5	6.5
18	10.0	10.0	7.0	7.0	4.5	4.5	5.0	4.0	5.0	5.0	6.5	6.5
19	10.0	10.0	7.0	7.0	5.0	4.5	4.0	4.0	5.5	5.0	7.0	6.5
20	10.0	9.5	7.0	7.0	5.0	4.5	4.0	4.0	5.5	5.5	7.0	7.0
21	9.5	9.5	7.0	7.0	5.0	4.5	4.5	4.0	5.5	5.5	7.0	7.0
22	9.5	9.5	7.0	7.0	5.0	4.5	5.0	4.5	5.5	5.5	7.0	7.0
23	9.5	9.5	7.0	7.0	4.5	4.5	5.0	4.5	5.5	5.5	7.0	7.0
24	9.5	9.5	7.0	7.0	5.0	4.5	4.5	4.5	5.5	5.5	7.0	7.0
25	9.5	9.5	7.0	6.5	4.5	4.5	4.5	4.0	5.5	5.5	7.0	7.0
26	9.5	9.0	6.5	6.5	4.5	4.5	4.0	3.5	5.5	5.5	7.0	7.0
27	9.0	8.5	6.5	6.5	4.5	4.0	4.0	3.5	6.0	5.5	7.0	7.0
28	8.5	8.5	6.5	6.5	4.0	4.0	4.5	3.5	6.0	5.5	7.0	7.0
29	8.5	8.5	6.5	6.5	4.5	4.0	5.0	4.0	5.5	5.5	7.0	7.0
30	8.5	8.5	6.5	6.5	4.5	4.5	4.0	3.5	---	---	7.0	6.5
31	8.5	8.5	---	---	4.5	4.5	4.0	3.5	---	---	6.5	6.5
MONTH	11.0	8.5	8.5	6.5	6.5	4.0	5.0	3.5	6.0	3.5	7.0	5.5

12117500 CEDAR RIVER NEAR LANDSBURG, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	6.5	8.0	8.0	11.0	11.0	11.5	11.5	15.0	13.0	13.0	11.5
2	8.0	7.0	8.0	8.0	11.0	10.5	12.0	11.5	16.5	12.0	13.0	11.5
3	8.0	7.0	8.5	8.0	11.0	10.5	---	12.0	16.5	13.0	13.0	11.5
4	7.0	7.0	9.5	8.0	11.0	10.5	---	---	16.5	13.0	13.0	11.5
5	8.0	7.0	9.5	9.0	11.0	10.5	---	---	17.0	12.0	12.0	11.5
6	8.0	8.0	9.5	8.5	11.0	10.5	---	---	17.0	13.0	11.5	11.0
7	8.0	8.0	8.5	8.5	11.5	11.0	---	---	15.5	12.0	11.5	11.0
8	8.0	7.0	8.5	8.5	11.5	11.0	---	---	13.5	12.0	11.0	11.0
9	8.0	7.0	8.5	8.5	11.5	11.0	---	---	16.0	12.0	11.0	11.0
10	7.0	7.0	9.0	8.5	13.0	11.0	13.5	---	14.0	12.0	11.5	11.0
11	8.0	7.0	9.0	8.5	12.0	12.0	13.5	12.0	16.5	12.0	13.0	10.5
12	8.0	7.0	9.0	8.5	12.0	12.0	13.0	12.0	13.5	12.0	13.5	11.5
13	8.0	7.0	10.5	9.0	12.0	12.0	13.5	12.0	13.5	13.0	13.5	12.0
14	8.0	8.0	10.5	9.0	12.0	12.0	14.5	12.0	16.5	12.0	12.0	11.5
15	8.0	8.0	9.5	9.5	12.0	11.5	14.5	13.0	15.5	12.0	12.0	11.5
16	8.0	7.0	9.5	9.5	12.0	11.5	15.0	13.5	15.5	12.0	12.0	11.5
17	7.0	7.0	9.5	9.5	11.5	11.5	15.0	13.5	15.5	13.0	11.5	11.5
18	7.0	7.0	9.5	9.5	11.5	11.5	14.0	13.0	15.5	11.5	11.5	11.5
19	7.0	7.0	9.5	9.5	11.5	11.5	15.5	13.0	15.5	12.0	11.5	11.0
20	7.0	7.0	10.0	9.5	11.5	11.5	15.5	13.0	12.0	12.0	11.0	11.0
21	8.0	7.0	9.5	9.5	11.5	11.5	16.0	14.5	13.0	12.0	11.5	11.0
22	8.0	7.0	9.5	9.5	12.0	11.5	15.5	13.5	13.0	11.5	11.0	11.0
23	9.0	8.0	9.5	9.5	13.0	11.5	15.5	15.0	13.5	11.5	11.0	11.0
24	8.5	8.5	9.5	9.0	12.0	12.0	15.5	13.0	13.5	11.5	11.0	10.5
25	8.5	8.5	9.5	9.0	12.0	12.0	15.0	12.0	13.5	11.5	11.0	10.5
26	8.5	8.5	9.0	9.0	12.0	12.0	13.5	11.5	15.0	13.0	11.0	11.0
27	9.0	8.5	10.0	9.0	12.0	11.5	15.5	11.5	15.0	13.5	11.0	10.5
28	8.5	8.5	10.0	9.5	11.5	11.5	15.5	11.5	14.5	13.5	10.5	10.5
29	8.5	8.5	11.0	10.0	11.5	11.5	14.0	11.5	14.0	11.5	11.0	10.5
30	9.0	8.5	11.0	11.0	11.5	11.5	16.0	12.0	12.0	11.0	11.0	11.0
31	---	---	11.0	11.0	---	---	15.5	13.0	13.0	11.5	---	---
MONTH	9.0	6.5	11.0	8.0	13.0	10.5	---	---	17.0	11.0	13.5	10.5

12118200 RETREAT LAKE NEAR RAVENSDALE, WASH.

LOCATION.--Lat 47°21'02", long 121°56'42", in NE¼SW¼ sec.32, T.22 N., R.7 E., King County, 1.3 miles east of Ravensdale.

DRAINAGE AREA.--2.21 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
03...	0920	3.0	4.9	8.4	0	25	8.6	1.6	2.3
03...	0925	39	4.9	8.3	0	--	--	--	--
MAY									
09...	0815	3.0	13.0	8.1	30	30	--	--	--
09...	0825	39	7.9	8.2	50	40	--	--	--
JUNE									
26...	1035	3.0	16.9	6.1	30	0	--	--	--
26...	1045	38	8.9	8.0	310	100	--	--	--
OCT.									
06...	1400	3.0	14.4	6.9	70	16	9.9	1.8	2.3
06...	1405	39	10.0	8.8	1300	410	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
03...	.4	38	31	.1	1.3	.1	.15	.000	.06
03...	--	38	31	--	--	--	.15	.000	.06
MAY									
09...	--	36	30	--	--	--	.26	.010	.13
09...	--	39	32	--	--	--	.46	.010	.33
JUNE									
26...	--	39	32	--	--	--	.23	.010	.03
26...	--	42	35	--	--	--	.63	.010	.42
OCT.									
06...	.3	38	31	4.1	2.0	--	.32	.003	.02
06...	--	47	39	--	--	--	.90	.002	.74

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
03...	.44	.000	.010	43	42	28	0	70	9
03...	.44	.000	.010	--	--	--	--	70	--
MAY									
09...	.38	.000	.010	--	--	--	--	65	--
09...	.32	.000	.020	--	--	--	--	70	--
JUNE									
26...	.24	.000	.010	--	--	--	--	70	--
26...	.15	.000	.020	--	--	--	--	85	--
OCT.									
06...	.09	.000	.004	--	46	32	1	73	20
06...	.03	.000	.010	--	--	--	--	115	--

12119400 BOREN LAKE NEAR RENTON, WASH.

LOCATION.--Lat 47°31'52", long 122°09'45", in NW¼NW¼ sec.34, T.24 N., R.5 E., King County, 4.0 miles northeast of Renton.

DRAINAGE AREA.--1.07 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
FEB.									
28...	1145	3.0	5.8	13	20	58	10	3.0	4.1
28...	1155	31	5.2	13	40	--	--	--	--
MAY									
08...	1225	3.0	13.8	6.9	140	40	--	--	--
08...	1235	30	7.2	12	210	90	--	--	--
JUNE									
23...	1145	3.0	17.3	5.9	220	40	--	--	--
23...	1155	27	7.9	12	140	40	--	--	--
OCT.									
06...	0930	3.0	12.8	9.0	250	32	12	3.5	4.5
06...	0935	29	8.1	13	1500	890	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
FEB.									
28...	1.0	32	26	15	2.7	.0	.50	.020	.11
28...	--	35	29	--	--	--	.45	.020	.08
MAY									
08...	--	40	33	--	--	--	.35	.020	.05
08...	--	35	29	--	--	--	.22	.010	.06
JUNE									
23...	--	44	36	--	--	--	.47	.010	.09
23...	--	38	31	--	--	--	.33	.000	.02
OCT.									
06...	1.0	44	36	13	2.9	--	.39	.006	.08
06...	--	48	39	--	--	--	.60	.003	.40

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
FEB.									
28...	1.5	.010	.040	98	65	37	11	103	23
28...	1.6	.010	.010	--	--	--	--	103	--
MAY									
08...	.56	.000	.020	--	--	--	--	100	--
08...	.82	.000	.020	--	--	--	--	98	--
JUNE									
23...	.17	.000	.020	--	--	--	--	112	--
23...	.69	.000	.010	--	--	--	--	108	--
OCT.									
06...	.04	.002	.012	--	68	44	8	110	19
06...	.02	.021	.035	--	--	--	--	140	--

12127395 ECHO LAKE NEAR RICHMOND HEIGHTS, WASH.

LOCATION.--Lat 47°46'23", long 122°20'25", in SW¼NE¼ sec.6, T.26 N., R.4 E., King County, 0.8 mile north of Richmond Heights.

DRAINAGE AREA.--0.45 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
10...	0835	3.0	6.9	.4	10	0	5.3	1.2	5.0
10...	0840	32	6.1	.5	140	--	--	--	--
MAY									
08...	0930	3.0	14.2	.1	120	30	--	--	--
08...	0940	28	8.2	.2	350	60	--	--	--
JUNE									
23...	0915	3.0	18.5	.4	120	0	--	--	--
23...	0925	28	8.5	.4	630	440	--	--	--
OCT.									
10...	1110	3.0	13.5	.4	160	32	6.1	1.3	4.8
10...	1115	30	9.3	1.4	2400	1100	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
10...	1.5	23	19	.2	6.3	.1	.53	.000	.21
10...	--	23	19	--	--	--	.52	.000	.12
MAY									
08...	--	23	19	--	--	--	.50	.010	.27
08...	--	22	18	--	--	--	.55	.010	.15
JUNE									
23...	--	21	17	--	--	--	.41	.000	.07
23...	--	19	16	--	--	--	.99	.000	.57
OCT.									
10...	1.6	20	16	6.9	6.8	--	--	--	--
10...	--	32	26	--	--	--	--	--	--

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR.									
10...	.20	.000	.030	52	31	18	0	72	15
10...	.19	.000	.020	--	--	--	--	72	--
MAY									
08...	.10	.000	.030	--	--	--	--	67	--
08...	.12	.000	.030	--	--	--	--	74	--
JUNE									
23...	.00	.000	.030	--	--	--	--	70	--
23...	.04	.000	.050	--	--	--	--	95	--
OCT.									
10...	--	--	--	--	38	21	4	70	22
10...	--	--	--	--	--	--	--	123	--

12134900 WALLACE LAKE NEAR GOLD BAR, WASH.

LOCATION.--Lat 47°54'08", long 121°40'26", in SW¼NE¼ sec.20, T.28 N., R.9 E., Snohomish County, 3.3 miles northeast of Gold Bar.

DRAINAGE AREA.--3.76 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
MAY										
18...	0955	3.0	7.1	3.8	50	0	4.0	.3	1.1	.0
18...	1005	92	4.9	4.7	50	10	--	--	--	--
AUG.										
23...	1150	3.0	16.2	3.5	50	50	--	--	--	--
23...	1200	89	5.0	5.5	140	92	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
MAY									
18...	14	11	2.6	1.3	.0	.08	.010	.01	.14
18...	18	15	--	--	--	.21	.000	.07	.28
AUG.									
23...	17	14	--	--	--	.84	.000	.06	.02
23...	20	16	--	--	--	.11	.000	.01	.15

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
MAY									
18...	.000	.020	47	20	11	0	30	7.4	22
18...	.000	.010	--	--	--	--	38	7.7	--
AUG.									
23...	.000	.000	--	--	--	--	34	7.6	--
23...	.000	.000	--	--	--	--	41	7.0	--

12135000 WALLACE RIVER AT GOLD BAR, WASH.

LOCATION.--Lat 47°51'50", long 121°41'47", in NW¼NE¼ sec.6, T.27 N., R.9 E., Snohomish County, temperature recorder at gaging station on right bank, 30 ft downstream from highway bridge, 0.5 mile north of Gold Bar, 1.3 miles upstream from Olney Creek and at mile 5.8.

DRAINAGE AREA.--19.0 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1955 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 19.0°C Aug. 7, 9; minimum, freezing point Jan. 26-28, 30.

Period of record:
Water temperatures: Maximum, 21.0°C July 29, Aug. 8, 9, 1960, July 13, 1961, Aug. 16, 1967; minimum, freezing point on several days during February 1956, January 1957, December 1964, and January 1972.

REMARKS.--Recorder stopped Mar. 2-16, May 5-16, Sept. 10-20; range in temperature 1.5°C to 6.0°C, 4.5°C to 10.0°C and 8.5°C to 14.5°C, respectively.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	9.0	5.5	3.5	5.0	4.5	3.5	3.5	1.5	0.5	3.5	1.5
2	11.0	9.0	5.0	4.5	5.0	4.5	3.5	3.0	1.5	0.5	---	---
3	10.5	10.0	5.0	4.5	4.5	4.5	3.0	2.0	2.0	1.0	---	---
4	12.0	10.5	5.5	4.5	4.5	4.0	2.0	2.0	3.0	1.0	---	---
5	13.0	11.0	5.0	4.5	4.5	4.0	3.5	2.0	3.0	1.5	---	---
6	12.0	11.5	5.0	4.5	4.5	4.0	3.5	3.5	2.0	2.0	---	---
7	13.0	10.5	5.5	5.0	4.0	3.5	3.5	3.5	2.0	1.5	---	---
8	12.0	10.5	5.5	5.0	3.5	1.5	3.5	3.5	3.0	2.0	---	---
9	12.0	10.0	5.5	5.0	3.0	2.0	3.5	3.0	3.5	1.5	---	---
10	11.0	10.5	6.0	5.5	3.5	3.0	3.0	3.0	4.0	2.0	---	---
11	11.5	10.5	6.0	6.0	3.0	3.0	3.5	2.0	4.0	3.0	---	---
12	11.0	10.0	6.0	5.5	3.0	3.0	2.0	2.0	4.5	3.0	---	---
13	10.0	8.5	6.0	5.5	3.5	3.0	2.0	2.0	3.5	3.0	---	---
14	8.5	7.0	5.5	5.5	3.5	3.0	3.0	2.0	3.0	2.0	---	---
15	8.0	6.5	5.5	5.0	3.5	3.5	3.5	3.0	3.5	3.0	---	---
16	7.0	5.5	6.0	5.5	4.0	3.5	4.0	3.5	4.0	3.0	---	5.0
17	6.5	5.5	5.5	5.0	4.0	3.0	4.0	2.0	4.0	3.0	6.5	4.5
18	7.0	6.0	5.5	5.0	3.5	3.0	3.0	2.0	5.0	3.5	5.0	4.0
19	8.0	6.5	6.0	5.5	3.5	3.5	3.5	3.0	4.5	4.0	4.5	4.0
20	7.0	6.5	6.5	6.0	3.5	3.5	4.0	3.0	4.5	3.5	6.0	4.0
21	6.5	5.5	6.0	4.5	3.5	3.5	4.5	4.0	4.5	3.0	4.5	2.0
22	7.0	6.5	5.0	4.5	4.5	3.5	4.5	3.5	4.5	4.0	6.0	3.0
23	7.0	6.5	4.5	4.5	4.0	4.0	4.0	1.5	4.5	3.5	7.0	4.5
24	7.0	6.0	5.0	4.5	4.0	3.5	3.0	1.5	4.5	3.5	6.0	4.5
25	7.0	6.5	4.5	4.5	4.0	3.5	2.0	0.5	4.5	3.5	5.0	4.0
26	7.0	4.5	5.0	4.5	3.5	3.0	0.5	0.0	4.0	3.5	8.0	4.0
27	5.0	3.5	4.5	4.5	3.0	2.0	0.5	0.0	5.0	4.0	9.5	5.0
28	4.0	3.5	4.5	4.5	2.0	2.0	1.0	0.0	4.0	3.0	6.0	3.5
29	4.5	3.5	5.0	4.5	2.0	2.0	1.5	0.5	4.0	1.5	5.0	3.0
30	4.5	4.0	5.0	5.0	3.0	2.0	1.5	0.0	---	---	6.5	3.0
31	5.5	4.5	---	---	3.5	3.0	2.0	1.0	---	---	7.0	5.0
MONTH	13.0	3.5	6.5	3.5	5.0	1.5	4.5	0.0	5.0	0.5	---	---

12135000 WALLACE RIVER AT GOLD BAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	3.0	8.0	4.0	10.0	6.5	12.0	8.5	15.0	13.0	16.0	11.5
2	5.5	3.0	8.5	5.5	11.0	6.0	13.5	9.0	16.5	12.0	14.0	12.0
3	6.5	3.5	9.0	5.5	11.0	7.0	13.5	9.5	17.0	13.0	16.0	12.0
4	6.0	5.0	10.0	5.0	11.0	7.0	14.5	10.0	16.5	13.0	16.5	13.5
5	5.5	4.5	---	---	10.5	7.0	14.0	10.5	17.0	13.5	14.0	13.0
6	4.5	3.5	---	---	11.5	8.0	13.0	10.5	18.5	14.0	13.5	11.5
7	4.5	3.5	---	---	9.0	8.0	11.5	9.5	19.0	15.0	14.0	11.5
8	4.0	3.0	---	---	11.5	7.0	11.0	10.0	18.5	15.5	12.0	10.5
9	5.5	3.0	---	---	9.0	8.0	10.0	9.0	19.0	15.5	11.0	9.5
10	5.5	3.0	---	---	8.5	6.5	10.5	8.5	17.0	14.0	---	---
11	5.5	3.5	---	---	8.5	6.5	10.5	9.5	16.0	12.0	---	---
12	4.5	3.5	---	---	8.0	7.0	10.0	9.5	16.0	11.5	---	---
13	5.5	3.5	---	---	9.5	7.0	9.5	9.5	16.0	11.5	---	---
14	5.0	4.5	---	---	9.0	8.0	12.0	9.0	13.5	11.5	---	---
15	5.5	3.0	---	---	9.0	8.0	14.0	10.0	13.0	12.0	---	---
16	4.0	2.0	---	6.0	9.0	8.0	15.0	11.0	14.5	11.5	---	---
17	4.5	2.0	6.0	5.0	10.0	7.0	15.5	11.5	13.5	12.0	---	---
18	5.0	3.0	7.0	5.0	11.5	8.0	14.0	12.0	15.0	11.0	---	---
19	5.5	3.5	10.0	5.0	13.0	8.5	14.5	11.0	14.0	12.0	---	---
20	5.5	4.5	9.0	6.0	11.0	8.5	14.0	10.5	15.5	12.0	---	---
21	5.5	4.5	7.0	5.5	9.5	8.5	14.5	10.5	14.5	13.0	10.0	8.5
22	5.5	4.5	5.5	5.5	9.0	8.5	15.0	11.0	15.0	13.5	9.5	8.5
23	5.0	3.0	6.0	5.0	8.5	7.0	14.0	11.0	15.5	12.0	9.0	6.5
24	5.5	3.5	6.5	5.5	8.5	6.5	13.5	11.5	16.5	13.5	8.5	6.0
25	4.5	3.0	9.5	5.0	8.0	8.0	14.0	11.5	16.5	12.0	8.5	6.0
26	4.0	3.0	10.5	6.0	8.0	7.0	14.5	11.5	17.0	13.5	7.0	6.0
27	4.5	3.5	10.0	6.5	9.5	8.0	15.0	11.5	18.0	14.0	7.0	5.5
28	6.0	3.5	10.0	6.5	12.0	8.0	15.5	11.5	18.5	14.5	8.0	6.0
29	6.0	4.0	10.0	6.5	12.0	9.0	15.5	12.0	17.0	14.0	9.0	6.5
30	5.5	4.0	10.5	6.5	12.0	8.5	16.0	12.0	16.0	12.0	9.5	7.0
31	---	---	8.5	7.0	---	---	16.5	13.5	16.0	12.0	---	---
MONTH	6.5	2.0	---	---	13.0	6.0	16.5	8.5	19.0	11.0	---	---

12139490 ROESIGER LAKE NEAR MONROE, WASH.

LOCATION.--Lat 47°58'19", long 121°55'23", in SW¼NW¼ sec.28, T.29 N., R.7 E., Snohomish County, 8.5 miles north of Monroe.

DRAINAGE AREA.--3.55 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples were taken at two sites within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
MAR.									
08...	1015	3.0	5.3	4.6	10	13	1.8	.8	1.5
08...	1020	67	5.0	4.6	40	--	--	--	--
08...	1210	3.0	5.3	4.5	0	13	1.7	.8	1.5
08...	1215	95	4.8	4.5	30	--	--	--	--
MAY									
11...	0825	3.0	13.0	4.1	30	30	--	--	--
11...	0835	66	5.0	5.1	130	50	--	--	--
11...	1015	3.0	13.0	4.3	20	10	--	--	--
11...	1025	100	4.9	4.9	110	10	--	--	--
JULY									
25...	1140	3.0	21.8	3.5	40	0	--	--	--
25...	1145	65	5.1	5.8	580	180	--	--	--
25...	1415	3.0	22.0	3.9	30	0	--	--	--
25...	1420	95	5.0	4.5	20	0	--	--	--
OCT.									
12...	0915	3.0	13.1	3.6	50	16	3.1	1.2	1.6
12...	0920	63	5.1	6.4	840	1000	--	--	--
12...	1110	3.0	13.9	4.0	40	0	2.0	.9	1.5
12...	1115	94	5.0	6.1	180	170	--	--	--

DATE	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR.									
08...	.2	9	7	.1	1.3	.1	.22	.000	.08
08...	--	11	9	--	--	--	.23	.000	.03
08...	.3	11	9	.1	1.1	.1	.29	.000	.02
08...	--	11	9	--	--	--	.19	.000	.01
MAY									
11...	--	10	8	--	--	--	.53	.010	.01
11...	--	10	8	--	--	--	1.0	.010	.44
11...	--	11	9	--	--	--	.60	.010	.07
11...	--	10	8	--	--	--	.14	--	.00
JULY									
25...	--	10	8	--	--	--	.69	.000	.27
25...	--	8	7	--	--	--	.50	.010	.47
25...	--	12	10	--	--	--	.51	.000	.13
25...	--	9	7	--	--	--	.68	.010	.30
OCT.									
12...	.3	10	8	4.0	2.2	--	--	--	--
12...	--	11	9	--	--	--	--	--	--
12...	.3	9	7	4.0	2.3	--	--	--	--
12...	--	8	7	--	--	--	--	--	--

12139490 ROESIGER LAKE NEAR MONROE, WASH.--Continued

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	SUS-PENDED SOLIDS (MG/L)
MAR.									
08...	.34	.000	.010	34	15	8	0	26	7
08...	.33	.000	.010	--	--	--	--	26	--
08...	.40	.000	.000	24	16	8	0	26	8
08...	.39	.000	.010	--	--	--	--	26	--
MAY									
11...	.27	.000	.010	--	--	--	--	26	--
11...	.29	.000	.020	--	--	--	--	27	--
11...	.35	.000	.010	--	--	--	--	26	--
11...	.37	.000	.030	--	--	--	--	27	--
JULY									
25...	.06	.000	.000	--	--	--	--	32	--
25...	.36	.000	.020	--	--	--	--	31	--
25...	.22	.000	.030	--	--	--	--	28	--
25...	.39	.000	.030	--	--	--	--	32	--
OCT.									
12...	--	--	--	--	21	13	4	26	17
12...	--	--	--	--	--	--	--	32	--
12...	--	--	--	--	20	9	2	27	20
12...	--	--	--	--	--	--	--	--	--

12150450 KING LAKE NEAR MONROE, WASH.

LOCATION.--Lat 47°48'34", long 121°55'19", in SW¼SW¼ sec.21, T.27 N., R.7 E., Snohomish County, 4.0 miles southeast of Monroe.

DRAINAGE AREA.--0.16 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR., 1972								
14...	1110	3.0	7.0	6.0	20	38	--	--
14...	1115	62	4.2	6.2	290	--	--	--
MAY								
11...	1340	3.0	13.6	4.4	150	10	--	--
11...	1350	57	4.2	6.6	240	0	--	--
JULY								
26...	1045	3.0	19.6	2.1	360	50	--	--
26...	1050	59	4.7	7.1	830	230	--	--
OCT.								
12...	1630	3.0	11.7	2.7	280	16	2.7	.7
12...	1635	60	4.9	8.0	4000	620	--	--

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)
MAR., 1972									
14...	--	--	10	8	--	--	.23	.000	.02
14...	--	--	12	10	--	--	.43	.000	.05
MAY									
11...	--	--	11	9	--	--	.22	.000	.02
11...	--	--	11	9	--	--	.11	.000	.03
JULY									
26...	--	--	11	9	--	--	.45	.000	.23
26...	--	--	9	7	--	--	.38	.000	.31
OCT.									
12...	1.9	.2	10	8	2.8	1.6	--	--	--
12...	--	--	12	10	--	--	--	--	--

DATE	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	SUSPENDED SOLIDS (MG/L)
MAR., 1972								
14...	.07	.000	.010	--	--	--	--	--
14...	.11	.000	.010	--	--	--	--	--
MAY								
11...	.34	.000	.010	--	--	--	--	--
11...	.12	.000	.010	--	--	--	--	--
JULY								
26...	.06	.000	.020	--	--	--	--	--
26...	.16	.010	.010	--	--	--	--	--
OCT.								
12...	--	--	--	18	10	1	26	23
12...	--	--	--	--	--	--	44	--

12153500 STEVENS LAKE NEAR LAKE STEVENS, WASH.

LOCATION.--Lat 48°00'53", long 122°03'55", in NE¼SW¼ sec.8, T.29 N., R.6 E., Snohomish County, at town of Lake Stevens.

DRAINAGE AREA.--6.83 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPER-ATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)
MAR.									
13...	1340	3.0	6.0	.3	10	13	6.1	2.5	3.9
13...	1350	145	6.0	.4	30	--	--	--	--
MAY									
12...	1330	3.0	15.2	.5	30	0	--	--	--
12...	1340	140	5.9	.6	80	30	--	--	--
JULY									
27...	1320	3.0	21.8	.5	30	20	--	--	--
27...	1330	140	6.1	1.5	140	300	--	--	--
OCT.									
11...	1200	3.0	13.0	.7	30	0	6.7	2.8	3.9
11...	1205	140	6.1	2.6	1600	420	--	--	--

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)
MAR.									
13...	1.6	33	27	.2	3.4	.1	.43	.000	.02
13...	--	33	27	--	--	--	.55	.000	.04
MAY									
12...	--	33	27	--	--	--	.45	.010	.04
12...	--	32	26	--	--	--	.33	.010	.02
JULY									
27...	--	30	25	--	--	--	.43	.000	.05
27...	--	28	23	--	--	--	.49	.000	.29
OCT.									
11...	1.5	31	25	6.0	4.5	--	--	--	--
11...	--	34	28	--	--	--	--	--	--

DATE	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	SUS-PENDED SOLIDS (MG/L)
MAR.									
13...	.43	.020	.020	51	34	26	0	75	28
13...	.41	.020	.030	--	--	--	--	--	--
MAY									
12...	.10	.000	.020	--	--	--	--	80	--
12...	.45	.010	.050	--	--	--	--	80	--
JULY									
27...	.05	.000	.000	--	--	--	--	78	--
27...	.55	.050	.060	--	--	--	--	80	--
OCT.									
11...	--	--	--	--	41	28	3	71	7
11...	--	--	--	--	--	--	--	81	--

12157500 GOODWIN LAKE NEAR SILVANA, WASH.

LOCATION.--Lat 48°08'02", long 122°17'57", in SW¼NE¼ sec.33, T.31 N., R.4 E., Snohomish County, 5.2 miles southwest of Silvana.

DRAINAGE AREA.--5.17 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to October 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, OCTOBER 1971 TO OCTOBER 1972

DATE	TIME	DEPTH (FT)	TEMPER-ATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)
MAR.									
13...	0915	3.0	7.2	.4	10	58	4.1	2.5	3.8
13...	0920	32	7.1	.4	20	--	--	--	--
MAY									
12...	0905	3.0	15.2	.0	20	0	--	--	--
12...	0915	45	9.2	.1	80	20	--	--	--
JULY									
27...	0940	3.0	20.9	.4	40	0	--	--	--
27...	0945	42	10.1	.4	520	110	--	--	--
OCT.									
10...	1435	3.0	14.0	.8	140	24	4.6	2.9	3.8
10...	1440	38	13.2	.8	130	16	5.2	2.9	3.8

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)
MAR.									
13...	1.0	27	22	.1	4.2	.1	.48	.000	.04
13...	--	27	22	--	--	--	.50	.000	.04
MAY									
12...	--	26	21	--	--	--	.78	.000	.58
12...	--	26	21	--	--	--	.53	.000	.11
JULY									
27...	--	22	18	--	--	--	.48	.000	.03
27...	--	26	21	--	--	--	1.2	.000	.73
OCT.									
10...	1.0	24	20	5.4	5.4	--	--	--	--
10...	1.0	24	20	7.0	5.1	--	--	--	--

DATE	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	SUS-PENDED SOLIDS (MG/L)
MAR.									
13...	.04	.000	.010	49	30	21	0	65	10
13...	.04	.000	.010	--	--	--	--	65	--
MAY									
12...	.04	.000	.010	--	--	--	--	62	--
12...	.06	.000	.020	--	--	--	--	64	--
JULY									
27...	.05	.000	.000	--	--	--	--	67	--
27...	.05	.000	.020	--	--	--	--	74	--
OCT.									
10...	--	--	--	--	36	23	4	67	18
10...	--	--	--	--	38	25	5	69	--

12168500 PILCHUCK CREEK NEAR BRYANT, WASH.

LOCATION.--Lat 48°15'58", long 122°09'46", in NE¼NE¼ sec.16, T.32 N., R.5 E., Snohomish County, temperature recorder at gaging station on right bank, 500 ft upstream from bridge on State Highway 534, 1.8 miles north of Bryant, and at mile 6.4.

DRAINAGE AREA.--52.0 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1952 to August 1968, March 1969 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 22.0°C Aug. 8, 9; minimum, freezing point Jan. 26 to Feb. 5.

Period of record:
Water temperatures: Maximum, 28.0°C July 28, 1958; minimum, freezing point Jan. 26 to Feb. 5, 1972.

REMARKS.--Recorder not operating Aug. 22-24; range in temperature, 14.5°C to 18.0°C.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	9.5	6.0	5.0	6.0	5.0	3.0	1.5	0.5	0.0	3.0	2.0
2	11.5	10.0	6.5	5.5	5.5	4.5	2.0	1.5	0.5	0.0	3.5	2.0
3	11.5	10.5	6.0	6.0	5.0	4.5	1.5	1.0	0.5	0.0	3.5	2.0
4	13.5	11.5	6.0	5.5	5.0	4.0	1.5	1.5	0.5	0.0	3.5	2.0
5	13.5	11.5	5.5	5.0	4.5	3.5	3.0	1.5	1.0	0.0	4.0	3.0
6	13.0	11.5	6.0	5.0	4.5	4.0	3.0	3.0	1.5	0.5	3.0	2.0
7	12.0	10.5	6.5	6.0	4.0	3.0	3.0	2.0	1.5	0.5	3.5	2.0
8	12.0	10.5	6.0	6.0	3.5	2.0	2.0	1.5	3.0	1.5	4.0	3.0
9	11.5	9.5	6.5	6.0	3.0	2.0	2.0	1.5	2.0	1.5	5.0	4.0
10	11.5	10.5	7.0	6.5	3.5	3.0	1.5	1.0	3.0	1.0	4.5	4.0
11	12.0	11.0	7.0	6.5	3.5	3.0	2.0	1.0	3.0	2.0	4.5	4.0
12	11.5	10.5	7.0	6.5	3.5	3.0	3.0	2.0	3.0	2.0	4.5	4.0
13	11.5	10.0	7.0	6.5	3.0	2.0	2.0	1.5	3.0	2.0	4.5	4.5
14	10.0	9.0	7.0	6.5	3.0	2.0	3.0	2.0	2.0	1.5	5.0	4.5
15	9.0	7.0	7.0	6.5	3.5	3.0	3.0	2.0	3.0	2.0	5.0	4.5
16	7.0	6.0	7.0	6.0	3.5	3.0	3.5	3.0	3.5	2.0	5.5	5.0
17	6.5	5.5	6.0	5.5	3.5	2.0	3.5	2.0	3.5	2.0	6.0	4.5
18	8.0	6.5	6.0	5.5	4.0	3.5	3.0	2.0	3.5	3.5	6.0	5.0
19	8.5	8.0	6.5	6.0	3.5	3.0	4.0	3.0	4.0	3.0	5.0	4.5
20	8.0	7.0	7.0	6.0	3.5	3.0	3.5	3.0	3.5	2.0	6.0	4.5
21	7.0	6.5	6.5	5.5	3.0	2.0	3.5	3.0	3.5	2.0	6.0	5.0
22	8.0	7.0	6.0	5.5	3.5	3.0	4.0	3.5	3.5	3.0	5.5	4.5
23	8.5	8.0	6.0	5.5	3.5	3.0	4.0	2.0	3.5	3.0	5.0	4.0
24	8.0	7.0	6.0	5.5	3.5	2.0	2.0	1.5	3.5	3.0	5.0	3.0
25	8.0	8.0	5.5	5.5	3.0	1.5	1.5	0.5	3.5	3.0	4.0	3.0
26	8.0	6.5	6.0	5.5	1.5	0.5	0.5	0.0	3.5	3.0	4.0	3.0
27	6.5	5.0	6.0	5.5	1.0	0.5	0.5	0.0	4.5	3.5	4.5	3.5
28	5.0	3.5	6.0	5.5	1.5	1.0	0.5	0.0	4.5	3.5	5.0	3.5
29	4.5	3.5	6.0	5.5	1.5	1.0	0.5	0.0	3.5	3.0	5.5	4.0
30	5.0	4.5	6.0	5.5	2.0	1.5	0.5	0.0	---	---	6.0	4.0
31	5.5	5.0	---	---	2.0	1.5	0.5	0.0	---	---	6.5	5.5
MONTH	13.5	3.5	7.0	5.0	6.0	0.5	4.0	0.0	4.5	0.0	6.5	2.0

12168500 PILCHUCK CREEK NEAR BRYANT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	4.5	8.5	5.0	14.0	10.0	16.0	12.0	19.5	16.5	18.0	14.0
2	5.5	3.5	9.0	7.0	15.0	10.5	17.0	13.5	19.0	15.5	18.5	14.5
3	6.0	3.5	9.5	6.5	15.0	11.5	19.0	14.5	19.5	15.5	19.0	15.0
4	6.5	5.5	10.0	6.5	14.5	11.5	20.0	15.0	20.0	16.0	18.5	15.0
5	6.0	5.5	10.5	7.0	15.5	12.0	20.5	16.0	20.0	16.0	15.5	14.0
6	5.5	4.5	10.5	8.0	15.5	13.0	18.5	15.0	21.0	16.5	14.5	14.0
7	4.5	4.0	8.5	7.0	15.0	13.5	15.5	14.0	21.5	18.0	15.0	14.0
8	4.5	3.5	8.5	7.0	16.0	11.5	15.5	14.0	22.0	19.0	14.0	13.5
9	5.0	3.0	8.0	6.5	15.5	13.5	14.5	13.0	22.0	19.0	13.5	11.0
10	5.0	3.5	9.0	7.0	13.5	10.5	13.0	11.5	20.0	17.0	13.0	10.5
11	5.0	3.5	10.0	8.0	12.0	9.5	13.0	12.0	19.5	16.0	13.5	10.5
12	4.5	4.0	11.5	8.5	11.5	11.0	12.0	11.0	18.5	15.0	14.0	10.5
13	5.5	4.0	11.5	9.0	13.0	10.5	11.5	11.0	18.5	14.5	14.5	11.0
14	5.0	4.5	12.0	9.5	13.0	11.0	14.5	11.5	16.5	14.5	14.5	12.0
15	5.5	3.5	12.0	10.0	13.5	11.5	15.5	13.0	15.5	15.0	14.5	12.0
16	4.5	3.5	10.5	9.0	14.5	11.5	17.0	14.0	17.0	14.5	14.0	11.5
17	4.5	3.0	10.5	8.5	14.0	11.5	18.5	15.5	15.5	15.0	11.5	10.5
18	5.0	4.0	10.5	8.0	15.5	11.5	18.0	16.0	17.0	13.5	12.0	10.0
19	5.0	4.0	12.0	8.5	18.0	13.0	18.5	15.5	16.0	14.5	10.5	9.5
20	5.5	4.5	13.0	10.0	15.5	13.5	19.0	15.5	17.0	14.5	10.0	9.5
21	5.0	3.5	13.0	9.0	13.5	12.0	19.5	16.0	17.0	15.5	10.0	9.5
22	6.0	3.5	9.0	8.0	13.5	11.5	20.0	16.0	---	15.5	9.5	8.5
23	7.0	4.5	9.0	8.0	12.0	11.0	18.5	16.5	---	---	9.0	8.5
24	7.0	5.0	9.5	8.0	11.0	9.5	16.5	15.5	18.5	---	9.5	8.5
25	5.5	4.5	11.0	7.0	10.5	10.0	17.0	15.5	18.5	15.0	9.0	8.0
26	7.0	5.0	13.5	9.5	10.0	9.5	18.5	14.5	19.0	15.0	9.0	8.5
27	9.0	5.5	14.0	11.0	10.5	10.0	19.0	14.5	19.5	16.0	8.5	7.0
28	8.5	4.5	15.0	11.5	13.0	10.0	19.5	15.0	20.0	16.0	9.0	8.0
29	6.0	4.5	14.5	12.0	14.5	12.0	20.0	15.5	19.0	16.0	9.5	8.0
30	6.5	4.5	15.0	11.5	15.5	12.0	20.0	15.5	18.5	15.0	10.0	8.5
31	---	---	14.0	11.0	---	---	20.5	16.0	18.5	14.5	---	---
MONTH	9.0	3.0	15.0	5.0	18.0	9.5	20.5	11.0	22.0	13.5	19.0	7.0

12179000 SKAGIT RIVER ABOVE ALMA CREEK, NEAR MARBLEMOUNT, WASH.

LOCATION.--Lat 48°36'27", long 121°21'37", in SW¼NE¼ sec.15, T.36 N., R.11 E., Skagit County, Ross Lake National Recreation Area, temperature recorder at gaging station on right bank, 0.6 mile upstream from Alma Creek, 6.8 miles north of Marblemount, and at mile 85.8.

DRAINAGE AREA.--1,274 sq mi, of which 400 sq mi is in Canada.

PERIOD OF RECORD.--Chemical analyses: July 1959 to July 1960.
Water temperatures: January 1953 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 11.0°C Sept. 2, 3; minimum, 1.0°C Jan. 26 27, 29-31, Feb. 1-3.

Period of record:
Water temperatures: Maximum, 13.5°C July 30, 1961, Sept. 5, 1966, July 31, 1970; minimum, 1.0°C Jan. 26, 27, 29-31, Feb. 1-3, 1972.

REMARKS.--Recorder not operating Feb. 6-16; range in temperature, 1.5°C to 3.0°C.

TEMPERATURE (°C) OF WATER° WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	9.0	8.0	8.0	7.0	6.0	4.5	4.0	1.5	1.0	3.0	2.0
2	10.0	9.0	8.0	8.0	6.5	6.0	4.5	4.0	1.5	1.0	3.0	2.0
3	10.0	9.5	8.0	7.0	6.5	6.0	4.0	3.5	1.5	1.0	3.0	2.0
4	10.0	9.5	7.0	6.5	6.5	5.5	4.0	4.0	1.5	1.5	3.5	1.5
5	10.0	9.5	7.0	6.5	6.0	5.5	4.5	4.0	3.0	1.5	3.0	1.5
6	10.0	10.0	7.0	6.5	6.0	5.5	4.5	4.0	---	---	3.0	2.0
7	10.0	10.0	7.0	6.5	6.0	5.5	4.0	3.5	---	---	3.0	2.0
8	10.0	9.5	7.0	6.5	6.0	5.0	4.0	3.5	---	---	3.5	3.0
9	10.0	9.5	7.0	6.5	5.5	5.0	3.5	3.5	---	---	3.5	3.0
10	10.0	9.5	7.0	6.5	5.5	5.0	3.5	3.0	---	---	3.5	3.0
11	10.0	10.0	7.0	6.5	5.5	5.0	3.5	3.0	---	---	3.5	3.0
12	10.0	9.5	7.0	6.5	5.5	5.0	3.5	3.0	---	---	3.5	3.0
13	9.5	9.5	7.0	6.5	5.5	4.5	3.5	3.0	---	---	3.5	3.0
14	9.5	9.5	7.0	6.5	5.5	4.5	3.5	3.5	---	---	3.5	3.0
15	9.5	9.0	7.0	6.5	5.5	5.0	4.0	3.5	---	---	3.5	3.0
16	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.5	---	---	4.0	3.5
17	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.5	3.0	2.0	4.0	3.5
18	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.0	3.0	2.0	4.0	3.5
19	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.5	3.5	2.0	4.5	3.5
20	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.0	3.5	2.0	4.0	3.5
21	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.0	3.5	2.0	4.0	3.5
22	9.0	9.0	7.0	6.5	5.5	5.0	3.5	3.5	3.0	2.0	4.0	3.5
23	9.0	9.0	6.5	6.0	5.0	5.0	3.5	3.0	3.0	2.0	4.5	3.0
24	9.0	9.0	7.0	6.5	5.0	4.0	3.5	1.5	3.0	2.0	4.0	3.0
25	9.0	9.0	6.5	6.0	4.0	3.5	1.5	1.5	3.0	2.0	4.0	3.0
26	9.0	8.5	6.5	6.0	3.5	3.5	1.5	1.0	3.0	1.5	4.0	3.0
27	8.5	8.5	6.5	6.0	4.0	3.5	1.5	1.0	3.0	1.5	4.0	3.0
28	8.5	8.0	6.5	6.0	4.5	4.0	1.5	1.5	3.0	2.0	4.0	3.0
29	8.5	8.0	6.5	6.0	4.5	4.0	2.0	1.0	3.0	2.0	4.0	3.0
30	8.5	8.5	7.0	6.0	4.5	4.0	1.5	1.0	---	---	4.5	3.5
31	8.5	8.0	---	---	4.5	4.5	1.5	1.0	---	---	4.5	3.5
MONTH	10.0	8.0	8.0	6.0	7.0	3.5	4.5	1.0	---	---	4.5	1.5

12179000 SKAGIT RIVER ABOVE ALMA CREEK, NEAR MARBLEMOUNT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	3.0	5.5	4.0	7.0	6.0	8.5	7.0	9.0	8.5	10.0	9.0
2	4.5	3.0	6.5	4.5	7.0	6.0	9.0	8.0	10.0	8.5	11.0	9.0
3	4.5	3.5	7.0	4.5	8.0	6.5	10.0	8.5	10.0	8.5	11.0	9.0
4	4.5	4.0	7.0	4.5	8.0	6.5	10.0	9.0	10.0	9.0	10.5	9.0
5	4.5	3.5	6.5	5.0	8.5	7.0	10.0	9.0	10.0	8.5	10.0	9.0
6	4.5	3.5	5.5	4.5	8.0	7.0	9.5	9.0	10.0	9.0	9.5	9.0
7	4.5	3.5	6.5	4.5	8.5	7.0	9.5	8.5	10.5	9.0	10.0	8.5
8	4.5	3.5	5.5	4.5	8.5	7.0	9.0	8.0	10.5	9.0	9.0	8.5
9	4.5	3.5	6.0	4.5	8.5	7.0	8.5	8.0	10.0	9.0	9.5	9.0
10	4.5	3.5	6.0	4.5	7.0	6.5	8.5	8.0	9.5	9.0	10.5	8.5
11	4.5	4.0	6.5	4.5	7.0	6.5	8.5	8.0	9.5	8.5	9.5	8.0
12	4.5	4.0	7.0	5.0	6.5	6.0	8.0	7.0	9.5	8.5	10.0	8.5
13	4.5	4.0	6.5	5.0	7.0	6.5	8.5	7.0	10.0	8.5	11.0	8.5
14	4.5	4.0	6.5	5.0	7.0	6.5	8.5	7.0	9.5	8.5	10.5	8.5
15	5.0	3.5	5.5	4.5	7.0	6.5	9.0	8.0	9.5	8.5	10.5	8.5
16	5.0	3.5	6.5	4.5	8.0	6.5	9.5	8.5	10.0	8.5	9.5	9.0
17	5.0	3.5	6.0	5.0	8.0	6.5	10.0	9.0	9.5	8.5	9.5	8.5
18	4.5	3.5	7.0	5.0	8.0	6.5	10.0	9.0	9.5	8.5	9.5	8.5
19	4.5	3.5	7.0	5.0	8.0	6.5	10.0	9.5	10.0	8.5	9.5	8.5
20	5.0	4.0	8.0	5.5	8.0	7.0	10.0	9.5	10.0	8.5	9.0	8.5
21	4.5	4.0	5.5	5.0	8.5	7.0	10.0	9.0	10.0	9.0	9.0	7.0
22	5.0	4.0	6.0	5.5	8.5	7.0	9.5	9.0	9.5	8.5	8.0	7.0
23	5.5	4.0	6.5	5.5	8.0	7.0	9.5	8.5	10.0	8.5	8.5	7.0
24	5.5	4.0	6.5	5.5	8.5	7.0	9.5	8.5	10.0	8.5	8.5	7.0
25	5.0	4.0	6.5	5.5	8.0	7.0	9.5	8.5	10.0	9.0	9.0	7.0
26	5.5	4.0	7.0	6.0	8.0	7.0	10.0	8.5	10.0	9.0	8.5	7.0
27	6.0	4.0	7.0	6.0	8.0	7.0	9.0	8.5	10.5	9.0	9.0	6.5
28	5.0	4.0	8.0	6.0	8.5	7.0	9.0	8.5	10.5	9.0	9.0	7.0
29	6.0	4.0	7.0	6.0	8.5	7.0	9.5	8.0	10.5	9.0	9.0	7.0
30	5.5	4.0	6.5	5.5	8.5	7.0	9.5	8.5	10.0	9.0	10.0	8.0
31	---	---	7.0	6.0	---	---	9.5	8.5	10.0	9.0	---	---
MONTH	6.0	3.0	8.0	4.0	8.5	6.0	10.0	7.0	10.5	8.5	11.0	6.5

12182500 CASCADE RIVER AT MARBLEMOUNT, WASH.

LOCATION.--Lat 48°31'26", long 121°22'58", in N½ sec.16, T.35 N., R.11 E., Skagit County, temperature recorder at gaging station on right bank, 1.1 miles downstream from Boulder Creek, 2.2 miles east of Marblemount, and at mile 2.9.

DRAINAGE AREA.--168 sq mi.

PERIOD OF RECORD.--Water temperatures: May 1952 to November 1963, September 1964, October 1965 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 11.0°C Aug. 6-9, 24-27; minimum, 1.0°C Dec. 27-29, Jan. 3, 4, 10-12.

Period of record:
Water temperatures: Maximum, 15.0°C Aug. 4, 1970; minimum, freezing point Feb. 1, 2, 18, 1956, Nov. 16, 1959, Jan. 19, 1960, Jan. 5, 1966, Jan. 29-Feb. 1, 1969.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	8.0	4.0	4.0	5.0	4.5	3.0	3.0	2.0	2.0	3.0	3.0
2	8.5	8.0	4.5	4.0	4.5	4.5	3.0	2.0	2.0	2.0	3.0	3.0
3	8.5	8.5	4.5	4.5	4.5	4.5	2.0	1.0	2.0	2.0	3.5	3.0
4	9.0	8.5	4.5	4.5	4.5	4.0	1.5	1.0	2.0	2.0	3.5	3.5
5	9.0	9.0	4.5	4.5	4.0	4.0	2.0	1.5	3.0	2.0	3.5	3.0
6	9.5	9.0	4.5	4.5	4.0	3.5	3.0	2.0	3.5	3.0	3.0	3.0
7	9.5	9.0	4.5	4.5	3.5	3.0	3.0	2.0	3.5	3.5	3.5	3.0
8	9.0	8.5	5.0	4.5	3.0	1.5	2.0	2.0	3.5	3.5	4.0	3.5
9	8.5	8.5	5.5	5.0	2.0	1.5	2.0	2.0	3.5	3.5	4.0	4.0
10	8.5	8.0	5.5	5.5	3.0	2.0	2.0	1.0	3.5	3.5	4.0	4.0
11	8.5	8.5	5.5	5.5	3.0	3.0	1.0	1.0	3.5	3.5	4.0	4.0
12	8.5	8.0	5.5	5.5	3.0	3.0	1.5	1.0	3.5	3.5	4.0	4.0
13	8.0	7.0	5.5	5.5	3.0	2.0	1.5	1.5	3.5	3.5	4.0	3.5
14	7.0	7.0	5.5	5.5	2.0	1.5	2.0	1.5	3.5	3.5	3.5	3.0
15	7.0	6.0	5.5	5.5	2.0	2.0	2.0	2.0	3.5	3.5	3.0	3.0
16	6.0	5.5	5.5	5.5	2.0	2.0	3.0	2.0	3.5	3.5	3.5	3.0
17	5.5	5.0	5.5	5.5	2.0	2.0	3.0	3.0	3.5	3.5	3.5	3.5
18	5.0	5.0	5.5	5.5	3.0	2.0	3.0	2.0	3.5	3.5	3.5	3.5
19	5.5	5.0	5.5	5.5	3.0	3.0	2.0	2.0	4.0	3.5	3.5	3.5
20	5.5	5.0	6.0	5.5	3.0	3.0	2.0	2.0	4.0	3.0	4.0	3.5
21	5.5	5.0	6.0	5.5	3.0	3.0	3.0	2.0	3.5	3.0	3.5	3.5
22	5.5	5.0	5.5	5.5	3.5	3.0	3.5	3.0	3.5	3.0	3.5	3.5
23	6.0	5.5	5.5	5.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
24	6.0	6.0	5.5	5.5	3.5	3.5	3.5	3.0	3.5	3.0	3.5	3.0
25	6.0	6.0	5.5	5.0	3.5	3.0	3.0	2.0	3.5	3.5	3.5	2.0
26	6.0	4.5	5.0	5.0	3.0	2.0	2.0	2.0	3.5	3.0	3.0	3.0
27	4.5	4.0	5.0	5.0	2.0	1.0	3.0	2.0	3.0	3.0	3.0	3.0
28	4.0	3.5	5.0	5.0	1.0	1.0	3.0	3.0	3.0	3.0	4.0	3.0
29	4.0	3.5	5.0	5.0	1.5	1.0	3.0	2.0	3.0	3.0	4.0	3.5
30	4.0	4.0	5.0	5.0	1.5	1.5	2.0	2.0	---	---	4.0	3.5
31	4.0	4.0	---	---	3.0	1.5	2.0	2.0	---	---	4.0	3.5
MONTH	9.5	3.5	6.0	4.0	5.0	1.0	3.5	1.0	4.0	2.0	4.0	2.0

12182500 CASCADE RIVER AT MARBLEMOUNT, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.0	3.5	5.0	3.0	6.5	5.5	8.5	6.0	10.0	8.5	9.5	8.5
2	4.0	2.0	5.0	4.0	7.0	5.0	9.0	6.5	10.5	9.0	10.0	8.5
3	4.0	2.0	5.5	4.0	7.0	5.5	9.0	6.5	10.5	8.5	10.0	9.0
4	4.0	3.5	6.0	3.5	7.0	5.5	9.0	6.5	10.5	9.0	10.5	9.5
5	3.5	3.5	5.5	3.5	7.0	5.5	9.0	6.5	10.5	9.0	10.5	9.5
6	3.5	3.5	4.5	4.0	7.0	5.5	9.0	7.0	11.0	9.0	9.5	8.5
7	3.5	2.0	5.5	4.0	6.5	6.0	8.5	7.0	11.0	9.0	8.5	8.5
8	3.0	2.0	4.5	4.0	8.0	6.0	8.0	6.5	11.0	9.5	8.5	8.5
9	3.0	2.0	4.0	4.0	7.0	6.0	7.0	6.5	11.0	9.5	8.5	8.0
10	3.0	2.0	4.5	4.0	6.5	6.0	7.0	6.5	10.5	9.0	9.0	8.0
11	3.0	2.0	5.0	4.0	6.5	6.0	7.0	7.0	10.5	9.0	9.0	8.0
12	3.0	3.0	6.0	4.0	6.5	6.0	7.0	7.0	10.0	8.5	9.5	8.5
13	3.0	3.0	6.0	4.0	6.5	6.0	7.0	6.5	10.0	9.0	9.5	8.5
14	3.0	3.0	5.0	4.0	6.5	6.0	9.0	6.5	10.0	9.0	9.5	8.5
15	4.0	3.0	4.5	4.0	6.5	6.0	9.5	7.0	9.0	9.0	9.5	9.0
16	3.5	2.0	5.0	4.0	6.5	6.5	10.0	8.0	10.0	9.0	9.5	9.5
17	3.5	2.0	4.5	4.5	6.5	6.5	9.5	8.0	10.0	9.0	9.5	8.5
18	3.5	3.0	5.0	4.0	9.0	6.5	9.0	8.0	10.0	9.0	8.5	7.0
19	3.0	2.0	6.5	4.0	9.0	6.5	9.0	7.0	10.0	9.0	8.0	7.0
20	3.0	2.0	6.0	4.5	8.5	6.5	9.0	7.0	10.5	9.0	7.0	7.0
21	3.0	2.0	5.0	4.0	6.5	6.5	9.5	8.0	10.5	10.0	7.0	7.0
22	4.0	1.5	5.0	5.0	7.0	6.5	9.5	8.0	10.0	9.5	7.0	7.0
23	4.0	2.0	5.0	4.5	7.0	6.5	9.5	8.0	10.0	9.0	7.0	6.0
24	4.5	4.0	5.0	4.5	8.0	6.5	9.5	8.0	11.0	9.5	6.5	6.0
25	4.0	3.5	6.5	4.5	8.0	6.5	9.5	8.5	11.0	9.5	6.5	6.0
26	5.0	3.5	8.0	5.0	6.5	6.5	9.5	8.5	11.0	10.0	6.0	5.5
27	5.5	3.5	6.5	5.0	6.5	6.5	10.0	8.5	11.0	10.0	5.5	5.5
28	5.0	3.0	6.5	5.0	8.5	6.5	10.0	8.5	10.5	9.5	6.0	5.5
29	3.5	3.0	6.5	4.5	9.0	7.0	10.0	8.5	10.5	9.5	6.0	5.5
30	4.0	2.0	6.0	4.5	9.0	6.5	10.5	8.5	10.5	9.0	7.0	6.0
31	---	---	6.0	5.0	---	---	10.5	8.5	9.5	8.5	---	---
MONTH	5.5	1.5	8.0	3.0	9.0	5.0	10.5	6.0	11.0	8.5	10.5	5.5

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY, WASH.
(Irrigation network station)

LOCATION.--Lat 48°55'00", long 117°47'40", in SW¼SW¼ sec.33, T.40 N., R.40 E., Stevens County, at bridge on State Highway 25 at Northport, 10.9 miles downstream from gaging station at international boundary, and at mile 734.1.

DRAINAGE AREA.--59,700 sq mi, approximately (at gaging station).

PERIOD OF RECORD.--Chemical analyses: February 1910 to January 1911, November 1951 to September 1972. Water temperatures: November 1951 to September 1972.

EXTREMES.--1971-72:
Specific conductance: Maximum observed, 285 micromhos Apr. 2; minimum observed, 115 micromhos June 23.
Water temperatures: Maximum, 19.0°C Aug. 30, 31; minimum 1.0°C Jan. 30, 31, Feb. 1, 3.

Period of record:
Specific conductance: Maximum observed, 285 micromhos Apr. 2, 1972; minimum observed, 115 micromhos June 23, 1972.
Water temperatures: Maximum, 21.0°C May 14, 19, 1959; minimum, freezing point on several days during January in 1960, 1962, and 1963.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
13...	1130	74300	21	4.5	1.4	1.0	78	64	12	1.3	.15
20...	1100	63400	21	4.6	1.8	.2	82	67	--	3.0	.12
NOV.											
10...	1055	87000	21	4.4	1.5	.7	74	61	13	.5	.10
16...	1000	91500	20	4.3	1.4	.6	73	60	13	.5	--
17...	1300	90400	20	4.2	1.9	1.0	76	62	13	1.0	.26
FEB.											
09...	1230	72500	23	5.0	1.8	.9	81	66	16	1.2	.08
23...	1145	50000	25	5.3	2.6	1.0	87	71	21	2.2	.25
MAR.											
15...	1115	74700	24	5.0	2.7	1.0	87	71	17	.9	.28
29...	1130	105000	25	5.3	2.0	.9	87	71	15	1.2	.24
APR.											
12...	1130	103000	22	5.1	2.4	.8	79	65	16	.7	.06
26...	1050	85000	23	5.2	1.8	1.2	82	67	16	1.6	.16
MAY											
10...	1105	113000	20	4.6	1.5	.9	76	62	15	1.0	.15
24...	1115	241000	17	4.0	1.9	.5	69	57	12	.4	.42
JUNE											
14...	1100	362000	20	4.3	.7	.9	71	58	12	.6	.47
28...	1120	313000	19	4.1	1.4	.7	67	55	11	1.1	.36
JULY											
12...	1140	209000	18	3.9	.9	.7	63	52	13	1.0	.32
26...	1100	201000	18	3.9	1.1	.7	65	53	8.8	1.0	.11
AUG.											
23...	1140	120000	18	3.9	1.1	.5	65	53	13	.1	.12
SEP.											
13...	1210	59100	20	4.0	1.3	.7	69	57	15	.3	.09
27...	1015	96800	20	4.3	1.2	.9	68	56	13	.7	.17

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.											
13...	.010	.07	.15	.030	.050	92	71	7	190	8.5	13.8
20...	.000	.04	.05	.010	.030	98	71	4	150	7.8	11.5
NOV.											
10...	.000	.02	.14	.030	.050	92	71	10	135	7.6	7.1
16...	--	--	.08	--	.090	98	68	8	147	7.6	7.5
17...	.000	.08	.18	.040	.060	90	67	5	148	7.9	7.5
FEB.											
09...	.000	.03	.04	.040	.040	96	78	12	170	--	1.4
23...	.000	.08	.18	.060	.060	148	84	13	182	7.6	2.9
MAR.											
15...	.000	.08	.18	.030	.060	86	80	9	175	7.7	4.8
29...	.040	.03	.10	.010	.060	126	84	13	169	7.8	4.6
APR.											
12...	.010	.02	.11	.030	.040	148	76	11	163	7.7	5.2
26...	.010	.04	.07	.030	.050	108	79	12	168	7.6	8.1
MAY											
10...	.040	.03	.08	.010	.030	104	69	7	166	7.7	12.2
24...	.010	.09	.11	.000	.040	144	59	2	154	7.7	10.0
JUNE											
14...	.010	.12	.10	.010	.040	92	68	9	149	7.8	10.6
28...	.010	.08	.15	.000	.030	120	64	9	150	7.7	11.4
JULY											
12...	.000	.07	.40	.000	.020	84	61	9	145	7.6	13.3
26...	.010	.04	.15	.010	.010	84	61	8	139	7.8	14.8
AUG.											
23...	.010	.09	.05	.010	.020	88	61	8	139	7.7	17.9
SEP.											
13...	.000	.02	.04	.000	.040	100	66	10	148	7.7	16.9
27...	.000	.02	.03	.040	.050	102	68	12	144	7.8	11.5

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT.										
13...	19	4	10.8	200	4	--	1	6	.4	10
20...	7	1	11.2	1200	3	--	2	5	.2	50
NOV.										
10...	12	2	12.8	100	21	--	1	5	1.2	50
16...	--	--	--	--	--	--	--	--	--	--
17...	10	1	12.8	250	13	--	0	0	.1	60
FEB.										
09...	8	4	13.8	160	--	0	1	6	.3	40
23...	14	7	13.7	170	--	0	3	10	1.0	210
MAR.										
15...	11	2	14.0	200	--	0	1	5	.7	40
29...	10	2	14.3	80	--	0	1	8	.0	40
APR.										
12...	11	4	13.3	250	--	0	4	8	.6	30
26...	9	2	13.2	36	--	0	2	9	.2	80
MAY										
10...	11	4	12.4	80	--	0	1	7	.0	20
24...	16	6	12.7	130	--	0	0	0	.2	10
JUNE										
14...	23	7	13.2	200	--	0	5	9	.7	10
28...	30	3	12.2	250	--	0	6	15	1.5	20
JULY										
12...	16	5	11.7	300	--	0	2	18	.0	0
26...	15	3	10.2	350	--	0	2	2	.3	30
AUG.										
23...	8	1	10.2	600	--	0	1	8	.4	20
SEP.										
13...	10	2	--	--	--	0	2	14	.2	60
27...	12	1	10.9	2000	--	0	9	7	.3	90

12399500 COLUMBIA RIVER AT INTERNATIONAL BOUNDARY, WASH.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	152	158	151	163	186	173	166	---	136	125	129
2	144	150	157	151	167	187	285	166	144	132	127	128
3	147	149	155	155	174	187	174	165	140	132	---	128
4	151	153	152	156	176	186	174	165	142	132	126	141
5	152	152	152	157	178	181	172	161	141	131	127	136
6	157	150	157	154	173	183	167	158	141	132	131	134
7	150	150	150	---	171	178	168	156	148	130	128	125
8	148	149	153	---	175	182	170	159	145	127	129	130
9	156	147	147	---	174	180	168	155	141	128	132	125
10	153	146	148	155	175	181	167	153	144	129	128	130
11	145	151	151	159	182	181	167	154	145	128	128	128
12	148	152	151	162	184	175	171	153	147	124	128	133
13	147	151	150	162	185	181	170	154	152	127	130	147
14	146	150	150	163	177	173	162	148	142	127	129	135
15	148	150	150	164	177	180	161	145	144	128	132	147
16	150	150	147	164	181	172	166	145	141	---	132	137
17	149	150	154	168	184	175	166	144	138	131	131	127
18	154	152	148	166	183	170	169	147	133	127	127	138
19	147	152	156	166	183	172	170	147	136	126	129	160
20	156	155	159	167	187	174	173	147	135	126	128	153
21	155	160	159	171	183	174	173	147	136	131	133	149
22	153	160	159	174	191	169	171	141	135	128	130	146
23	153	160	159	180	194	175	173	144	115	124	130	138
24	154	159	161	178	193	173	171	144	138	127	130	138
25	167	161	159	184	193	169	172	139	117	131	129	138
26	162	162	158	183	194	170	172	140	136	132	130	142
27	---	160	160	180	196	176	167	139	136	127	130	140
28	164	158	154	176	186	178	168	140	139	126	130	143
29	160	161	154	178	188	177	167	138	134	126	127	142
30	158	159	153	169	---	179	167	---	132	126	126	140
31	152	---	152	169	---	175	---	---	---	126	127	---
MONTH	152	154	154	167	182	177	173	150	139	129	129	138

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.5	9.0	7.0	4.5	1.0	3.5	6.0	7.5	---	12.5	15.5	18.5
2	14.5	9.0	6.5	4.5	1.5	4.0	6.5	8.0	11.5	12.5	15.5	18.0
3	14.0	9.0	6.5	4.0	1.0	3.5	6.0	8.5	11.5	12.5	---	18.5
4	14.5	8.5	6.5	4.0	1.5	3.5	6.0	8.5	11.0	12.5	16.0	18.0
5	15.0	8.5	6.5	4.0	1.5	3.5	6.5	8.5	11.0	13.0	16.0	18.0
6	14.5	8.0	6.5	4.0	2.0	3.5	6.5	8.5	11.0	13.0	16.5	17.0
7	14.5	8.0	6.[illegible]	---	2.0	3.5	6.5	8.5	11.0	13.5	17.0	18.0
8	14.0	7.0	6.5	---	2.5	3.5	6.0	9.0	11.5	13.0	17.0	18.0
9	14.0	7.0	6.5	---	2.0	4.0	6.0	9.0	11.5	13.0	17.5	17.0
10	14.0	7.0	6.5	4.0	2.5	4.0	6.0	9.0	11.5	13.0	17.0	17.0
11	14.5	7.5	5.5	3.5	2.5	4.5	6.0	9.5	11.5	13.0	17.0	16.5
12	14.0	8.0	5.5	4.0	3.0	4.5	6.0	9.5	10.5	13.0	17.0	17.0
13	14.0	8.0	5.0	3.5	2.0	5.0	6.5	9.5	10.5	13.5	17.0	17.0
14	13.5	8.0	5.0	2.5	3.0	4.5	6.5	9.5	10.5	14.0	17.0	17.5
15	13.5	8.5	4.0	3.0	2.5	---	6.5	9.0	11.0	14.0	17.0	17.5
16	12.0	8.0	4.5	3.0	2.5	5.0	5.5	9.0	11.5	---	17.5	17.0
17	12.0	8.0	4.5	3.0	2.0	5.5	6.0	9.5	11.5	14.5	17.0	16.5
18	12.0	8.0	4.5	3.5	2.5	5.5	6.0	9.5	12.0	14.5	16.5	16.5
19	12.0	8.0	4.0	3.5	3.0	5.5	6.0	9.5	12.0	14.0	17.0	16.0
20	12.0	8.0	5.0	3.5	3.0	6.0	6.0	9.0	12.0	14.5	17.0	16.0
21	12.0	8.5	4.5	3.5	3.0	5.5	6.5	9.0	11.5	14.5	17.0	15.5
22	12.0	7.5	4.5	3.5	3.0	5.5	6.5	9.0	11.5	14.5	17.0	15.0
23	12.0	8.0	5.0	3.0	3.0	5.5	6.5	9.5	11.5	14.5	16.5	14.5
24	11.5	8.0	4.0	3.0	3.5	5.5	7.0	9.5	11.5	14.5	16.5	14.0
25	11.5	7.5	4.5	3.0	3.5	5.0	7.0	10.0	11.5	14.5	17.0	13.5
26	9.5	7.0	4.0	2.0	3.5	5.0	7.0	10.0	11.5	14.5	18.0	13.0
27	---	7.0	4.0	2.0	4.0	5.0	7.0	10.5	11.5	14.5	18.0	13.0
28	10.0	7.0	4.0	1.5	4.0	5.0	8.0	11.0	11.0	14.5	18.5	12.5
29	10.0	7.0	4.0	1.5	4.0	5.0	7.5	11.0	11.5	15.5	18.5	12.0
30	9.5	7.0	4.5	1.0	---	5.5	7.5	---	12.0	15.5	19.0	12.0
31	9.0	---	4.5	1.0	---	5.5	---	---	---	15.5	19.0	---
MONTH	12.5	8.0	5.0	3.0	2.5	4.5	6.5	9.0	11.5	14.0	17.0	16.0

12404860 PIERRE LAKE NEAR ORIENT, WASH.

LOCATION.--Lat 48°53'51", long 118°08'14", in SW¼NE¼ sec.8, T.39 N., R.37 E., Stevens County, 3.6 miles northeast of Orient.

DRAINAGE AREA.--26.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
20...	1720	3.0	6.2	22	10	20	55	13	4.8	3.6
20...	1730	68	5.0	23	20	40	--	--	--	--
JUNE										
08...	0955	3.0	19.9	20	20	0	--	--	--	--
08...	1005	70	5.6	23	50	90	--	--	--	--
AUG.										
17...	1050	3.0	20.5	20	40	0	--	--	--	--
17...	1100	70	6.0	24	60	50	--	--	--	--
SEP.										
28...	1130	3.0	12.5	20	30	20	49	14	4.8	2.1
28...	1140	70	6.0	24	70	90	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
20...	199	163	51	.8	.2	.68	.010	.15	.05
20...	209	171	--	--	--	1.0	.010	.55	.01
JUNE									
08...	182	149	--	--	--	.22	.020	.02	.01
08...	217	178	--	--	--	1.1	.000	1.0	.02
AUG.									
17...	168	138	--	--	--	.43	.010	.17	.02
17...	216	177	--	--	--	4.1	.000	1.9	.03
SEP.									
28...	178	146	40	.1	--	57	.000	.08	.02
28...	220	180	--	--	--	.26	.000	.20	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
20...	.000	.060	322	248	190	28	375	7.9	28
20...	.030	.090	--	--	--	--	400	7.7	--
JUNE									
08...	.010	.020	--	--	--	--	335	8.8	--
08...	.10	.15	--	--	--	--	400	7.8	--
AUG.									
17...	.000	.010	--	--	--	--	340	8.2	--
17...	.18	.24	--	--	--	--	420	7.3	--
SEP.									
28...	.000	.040	--	218	180	34	320	--	11
28...	.21	.39	--	--	--	--	420	--	--

12404900 KETTLE RIVER NEAR BARSTOW, WASH.

LOCATION.--Lat 48°47'05", long 118°07'30", in SW¼SW¼ sec.16, T.38 N., R.37 E., Ferry County, at county road brid 0.1 mile downstream from Toulou Creek, 1.1 miles east of Barstow and at mile 10.9.

DRAINAGE AREA.--4,044 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1962, October 1962 to September 1970 (partial-record station), October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINIT. AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
13...	1325	338	28	6.0	4.9	1.5	114	94	13	1.3	.13
20...	1250	350	28	6.2	5.0	1.0	115	9[illegible]	15	2.3	.16
NOV.											
10...	1225	337	29	6.5	5.1	1.5	118	97	14	1.0	.07
17...	1430	396	27	5.7	5.2	1.3	112	92	13	1.7	.35
MAR.											
15...	1245	1090	19	4.1	4.1	1.3	84	69	--	.7	.36
29...	1315	2280	16	3.2	2.3	1.0	66	54	8.0	.8	.18
APR.											
12...	1330	3940	15	2.9	3.2	.9	61	50	6.7	.8	.14
26...	1235	3200	17	3.2	2.8	1.2	67	55	7.3	.9	.21
MAY											
10...	1255	10500	9.4	1.7	2.1	.8	41	34	4.5	1.7	.37
24...	1300	23100	6.4	1.3	1.7	.6	24	20	3.9	.6	.31
JUNE											
14...	1235	10900	8.9	1.4	.8	.4	34	28	5.6	.9	.56
28...	1320	8620	9.2	1.5	1.8	.5	34	28	5.0	.9	.73
JULY											
12...	1400	4110	11	1.8	2.0	.1	38	31	7.9	1.0	.28
26...	1215	2240	15	2.8	2.8	.9	58	48	5.5	1.0	.46
AUG.											
23...	1340	768	21	4.5	4.4	1.3	88	72	11	1.1	1.3
SEP.											
13...	1350	490	26	5.4	5.1	1.2	104	85	12	.8	.10
27...	1200	620	23	5.2	4.4	1.1	99	81	12	.2	.40

DATE	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.										
13...	.000	.03	.02	.000	.010	95	1	190	8.4	10.9
20...	.000	.03	.02	.010	.030	95	1	208	8.1	7.0
NOV.										
10...	.000	.00	.11	.000	.020	99	2	195	7.9	2.5
17...	.000	.10	.11	.010	.020	91	0	200	8.2	4.9
MAR.										
15...	.000	.04	.12	.000	.020	64	0	155	7.9	5.0
29...	.000	.01	.06	.010	.010	53	0	120	7.9	6.8
APR.										
12...	.010	.01	.01	.000	.010	49	0	116	7.8	5.2
26...	.010	.02	.02	.000	.030	56	1	122	7.8	9.0
MAY										
10...	.000	.05	.08	.000	.030	30	0	80	7.5	10.5
24...	.020	.08	.04	.000	.060	21	2	52	7.2	7.1
JUNE										
14...	.010	.13	.05	.000	.040	28	0	68	7.4	11.5
28...	.010	.12	.09	.000	.030	29	1	74	7.4	12.6
JULY										
12...	.000	.04	.07	.000	.010	35	4	93	7.4	14.5
26...	.000	.07	.09	.010	.020	49	1	120	7.8	19.5
AUG.										
23...	.010	.32	.04	.000	.020	71	0	187	7.6	20.0
SEP.										
13...	.000	.01	.05	.030	--	87	2	199	8.2	17.4
27...	.000	.04	.03	.000	.010	79	0	212	8.5	[illegible]

12404900 KETTLE RIVER NEAR BARSTOW, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
13...	9	1	10.8	100	3	--	1	0	.3	10
20...	20	1	12.2	200	5	--	1	1	.1	0
NOV.										
10...	9	1	12.5	40	23	--	1	0	.0	20
17...	8	2	13.1	20	18	--	1	0	.4	40
MAR.										
15...	12	1	13.0	200	--	0	1	0	.8	10
29...	26	2	12.6	150	--	0	1	3	.0	10
APR.										
12...	33	3	11.8	250	--	0	2	2	.5	7
26...	27	2	11.8	170	--	0	1	2	.1	8
MAY										
10...	60	5	12.0	250	--	0	1	2	.0	0
24...	71	26	12.6	900	--	0	3	2	.3	10
JUNE										
14...	47	6	11.4	800	--	0	1	4	.9	10
28...	55	4	10.9	270	--	0	1	1	.5	100
JULY										
12...	33	2	9.6	800	--	0	3	2	1.2	0
26...	12	2	9.4	50	--	0	4	11	1.5	10
AUG.										
23...	15	1	10.2	20	--	0	4	31	.6	10
SEP.										
13...	10	2	--	--	--	0	2	4	1.2	10
27...	13	2	10.2	110	--	0	8	0	.2	40

12406000 DEER LAKE NEAR LOON LAKE, WASH.

LOCATION.--Lat 48°06'28", long 117°36'18", in SW¼SW¼ sec.11, T.30 N., R.41 E., Stevens County, 3.3 miles northeast of town of Loon Lake.

DRAINAGE AREA.--18.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
18...	1200	3.0	5.5	11	20	0	8.0	2.0	4.4	1.6
18...	1210	72	4.9	11	60	0	--	--	--	--
JUNE										
06...	1025	3.0	17.1	10	90	10	--	--	--	--
06...	1035	72	6.1	11	150	0	--	--	--	--
AUG.										
15...	1205	3.0	21.2	9.1	40	0	--	--	--	--
15...	1207	70	6.5	12	300	17	--	--	--	--
SEP.										
25...	1400	3.0	14.2	9.1	40	10	8.3	2.3	4.2	1.4
25...	1410	70	6.8	11	90	20	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
18...	43	35	3.4	1.8	.1	.41	.000	.25	.01
18...	42	34	--	--	--	.35	.000	.24	.01
JUNE									
06...	42	34	--	--	--	.43	.000	.19	.01
06...	43	35	--	--	--	.23	.000	.04	.03
AUG.									
15...	43	35	--	--	--	.36	.000	.02	.05
15...	43	35	--	--	--	.84	.010	.06	.04
SEP.									
25...	44	36	4.1	.1	--	.29	.000	.01	.02
25...	44	36	--	--	--	.29	.000	.01	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
18...	.000	.070	68	53	28	0	76	7.8	29
18...	.000	.040	--	--	--	--	78	7.9	--
JUNE									
06...	.000	.010	--	--	--	--	77	8.2	--
06...	.000	.010	--	--	--	--	78	8.0	--
AUG.									
15...	.000	.010	--	--	--	--	79	8.2	--
15...	.000	.010	--	--	--	--	81	7.2	--
SEP.									
25...	.000	.030	--	51	30	0	82	--	8
25...	.000	.020	--	--	--	--	80	--	--

12408190 FRATER LAKE NEAR TIGER, WASH.

LOCATION.--Lat 48°39'18", long 117°29'11", in NW¼NE¼ sec.3, T.36 N., R.42 E., Pend Oreille County, 4.3 miles southwest of Tiger.

DRAINAGE AREA.--0.68 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
20...	0835	3.0	6.2	15	40	0	4.2	.7	2.2	.9
20...	0845	18	5.0	16	80	0	--	--	--	--
JUNE										
06...	1515	3.0	20.5	17	90	0	--	--	--	--
06...	1525	17	7.7	17	90	10	--	--	--	--
AUG.										
15...	1940	3.0	21.3	11	160	0	--	--	--	--
15...	1950	13	14.4	14	150	8	--	--	--	--
SEP.										
26...	0930	3.0	8.9	8.5	100	20	4.5	.8	2.3	1.0
26...	0940	10	8.8	8.7	110	30	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
20...	24	20	2.1	.8	.4	.26	.010	.07	.01
20...	21	17	--	--	--	.26	.010	.07	.01
JUNE									
06...	23	19	--	--	--	.47	.000	.17	.01
06...	23	19	--	--	--	.76	.000	.50	.01
AUG.									
15...	24	20	--	--	--	.87	.000	.07	.05
15...	23	19	--	--	--	1.4	.000	.46	.06
SEP.									
26...	24	20	2.5	.1	--	.90	.000	.22	.02
26...	27	22	--	--	--	1.0	.000	.23	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
20...	.000	.15	64	38	13	0	38	7.6	35
20...	.000	.070	--	--	--	--	38	7.6	--
JUNE									
06...	.000	.010	--	--	--	--	40	7.1	--
06...	.010	.020	--	--	--	--	43	6.8	--
AUG.									
15...	.000	.020	--	--	--	--	42	7.6	--
15...	.000	.060	--	--	--	--	40	6.8	--
SEP.									
26...	.000	.030	--	32	15	0	42	--	5
26...	.000	.050	--	--	--	--	44	--	--

12408195 LEO LAKE NEAR TIGER, WASH.

LOCATION.--Lat 48°38'46", long 117°30'06", in SE¼SE¼ sec.4, T.36 N., R.42 E., Stevens County, 5.2 miles southwest of Tiger.

DRAINAGE AREA.--2.94 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
20...	1050	3.0	6.0	15	280	20	6.2	1.1	3.0	1.0
20...	1100	28	5.2	16	500	50	--	--	--	--
JUNE										
06...	1700	3.0	20.2	16	100	10	--	--	--	--
06...	1710	29	6.7	15	130	0	--	--	--	--
AUG.										
16...	2030	3.0	20.3	13	120	25	--	--	--	--
16...	2040	29	7.5	20	2000	400	--	--	--	--
SEP.										
26...	1210	3.0	11.0	14	280	40	8.1	1.1	3.1	.8
26...	1220	29	7.8	21	1800	680	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
20...	33	27	2.4	1.1	.1	.24	.010	.09	.01
20...	32	26	--	--	--	.31	.010	.13	.01
JUNE									
06...	30	25	--	--	--	.33	.000	.05	.01
06...	31	25	--	--	--	.39	.000	.10	.01
AUG.									
16...	28	23	--	--	--	.39	.000	.05	.05
16...	41	34	--	--	--	.68	.000	.41	.06
SEP.									
26...	31	25	3.1	.0	--	.35	.000	.07	.02
26...	46	38	--	--	--	2.2	.000	.92	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
20...	.020	.040	68	46	20	0	57	7.6	33
20...	.020	.050	--	--	--	--	57	7.6	--
JUNE									
06...	.000	.010	--	--	--	--	47	7.5	--
06...	.000	.030	--	--	--	--	52	7.3	--
AUG.									
16...	.000	.020	--	--	--	--	50	7.4	--
16...	.030	.13	--	--	--	--	73	6.7	--
SEP.									
26...	.000	.030	--	46	25	0	55	--	6
26...	.050	.33	--	--	--	--	88	--	--

12408205 HERITAGE LAKE NEAR TIGER, WASH.

LOCATION.--Lat 48°37'47", long 117°31'54", in SW¼SE¼ sec.8, T.36 N., R.42 E., Stevens County, at narrows between Heritage and Thomas lakes, 7.0 miles southwest of Tiger.

DRAINAGE AREA.--10.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
APR.										
19...	0845	3.0	4.0	18	180	0	4.7	.8	2.5	1.2
19...	0855	12	4.2	18	360	30	--	--	--	--
JUNE										
07...	1445	3.0	20.0	17	110	20	--	--	--	--
07...	1455	12	12.0	17	100	0	--	--	--	--
AUG.										
16...	1006	3.0	20.1	13	180	8	--	--	--	--
16...	1015	12	18.3	13	210	0	--	--	--	--
SEP.										
26...	1700	3.0	10.3	12	210	20	7.2	1.3	3.1	.7
26...	1710	11	10.1	13	230	20	--	--	--	--

DATE	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)
APR.									
19...	24	20	4.1	1.9	.1	.43	.000	.32	.02
19...	26	21	--	--	--	.82	.010	.07	.01
JUNE									
07...	25	21	--	--	--	.36	.000	.12	.02
07...	28	23	--	--	--	.25	.010	.05	.01
AUG.									
16...	29	24	--	--	--	.50	.000	.06	.04
16...	30	25	--	--	--	.98	.000	.33	.04
SEP.									
26...	31	25	4.5	.1	--	.38	.000	.08	.02
26...	32	26	--	--	--	.34	.000	.08	.02

DATE	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	SUS-PENDED SOLIDS (MG/L)
APR.									
19...	.010	.16	48	45	15	0	42	7.9	34
19...	.010	.040	--	--	--	--	45	7.8	--
JUNE									
07...	.000	.020	--	--	--	--	46	7.3	--
07...	.010	.020	--	--	--	--	45	7.4	--
AUG.									
16...	.000	.020	--	--	--	--	54	7.5	--
16...	.000	.030	--	--	--	--	54	7.4	--
SEP.									
26...	.000	.040	--	44	23	0	57	--	10
26...	.000	.040	--	--	--	--	55	--	--

12408210 THOMAS LAKE NEAR TIGER, WASH.

LOCATION.--Lat 48°37'07", long 117°32'39", in NE¼SE¼ sec.18, T.36 N., R.42 E., Stevens County, at bridge between Thomas and Gillette lakes, 7.8 miles southwest of Tiger.

DRAINAGE AREA.--12.7 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
19...	1000	3.0	5.0	15	150	40	6.1	1.1	2.7	.9
19...	1010	45	4.1	19	280	30	--	--	--	--
JUNE										
07...	1610	3.0	21.0	16	100	0	--	--	--	--
07...	1620	50	6.0	16	1100	280	--	--	--	--
AUG.										
16...	1430	3.0	21.0	13	140	0	--	--	--	--
16...	1440	45	6.4	16	1900	230	--	--	--	--
SEP.										
26...	1800	3.0	11.6	13	180	60	6.6	1.2	2.9	.8
26...	1810	49	6.7	17	3100	240	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
19...	31	25	2.4	1.0	.1	.49	.010	.22	.01
19...	37	30	--	--	--	.46	.020	.26	.04
JUNE									
07...	29	24	--	--	--	.38	.000	.04	.02
07...	33	27	--	--	--	.35	.000	.16	.05
AUG.									
16...	29	24	--	--	--	1.0	.000	.08	.05
16...	33	27	--	--	--	.35	.000	.18	.04
SEP.									
26...	31	25	3.3	.1	--	.22	.000	.04	.02
26...	35	29	--	--	--	.48	.000	.32	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
19...	.000	.15	65	45	20	0	54	7.5	31
19...	.010	.15	--	--	--	--	68	7.3	--
JUNE									
07...	.000	.010	--	--	--	--	50	7.7	--
07...	.010	.020	--	--	--	--	57	7.1	--
AUG.									
16...	.000	.030	--	--	--	--	54	7.8	--
16...	.030	.080	--	--	--	--	61	6.9	--
SEP.									
26...	.000	.030	--	43	21	0	53	--	7
26...	.090	.12	--	--	--	--	70	--	--

12408214 GILLETTE LAKE NEAR TIGER, WASH.

LOCATION.--Lat 48°36'43", long 117°32'35", in NW¼NW¼ sec.20, T.36 N., R.42 E., Stevens County, at bridge between Gillette and Sherry lakes, 8.1 miles southwest of Tiger.

DRAINAGE AREA.--14.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
19...	1240	3.0	5.5	15	130	10	6.3	1.1	3.0	4.5
19...	1250	82	5.0	31	260	30	--	--	--	--
JUNE										
07...	0950	3.0	19.7	16	130	10	--	--	--	--
07...	1000	80	5.1	31	38000	1200	--	--	--	--
AUG.										
16...	1255	3.0	21.0	14	80	0	--	--	--	--
16...	1305	80	5.1	29	36000	1300	--	--	--	--
SEP.										
27...	1555	3.0	11.6	14	270	30	9.0	1.6	4.0	.9
27...	1605	78	5.1	29	22000	1100	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
19...	31	25	3.0	1.3	.1	.42	.010	.34	.02
19...	94	77	--	--	--	9.2	.020	.91	.02
JUNE									
07...	32	26	--	--	--	.39	.000	.06	.01
07...	91	75	--	--	--	8.3	.010	8.3	.04
AUG.									
16...	33	27	--	--	--	.69	.000	.04	.04
16...	90	74	--	--	--	9.0	.000	7.4	.07
SEP.									
27...	35	29	4.4	.1	--	.20	.000	.02	.02
27...	93	76	--	--	--	9.5	.010	.40	.03

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
19...	.000	.10	71	50	20	0	55	7.7	32
19...	2.5	2.6	--	--	--	--	250	7.0	--
JUNE									
07...	.000	.010	--	--	--	--	55	7.5	--
07...	.10	1.3	--	--	--	--	265	6.9	--
AUG.									
16...	.000	.020	--	--	--	--	59	7.6	--
16...	.15	.32	--	--	--	--	260	6.9	--
SEP.									
27...	.000	.030	--	52	29	0	63	--	10
27...	.42	1.1	--	--	--	--	265	--	--

12408216 SHERRY LAKE NEAR TIGER, WASH.

LOCATION.--Lat 48°36'24", long 117°32'36", in NW¼SW¼ sec.20, T.36 N., R.42 E., Stevens County, 8.3 miles southwest of Tiger.

DRAINAGE AREA.--15.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES. WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
19...	1430	3.0	5.5	15	120	20	6.5	1.2	2.7	1.0
19...	1440	79	5.1	25	240	40	--	--	--	--
JUNE										
07...	1120	3.0	19.8	16	180	0	--	--	--	--
07...	1130	84	5.1	25	10000	250	--	--	--	--
AUG.										
16...	1605	3.0	21.0	13	150	0	--	--	--	--
16...	1615	79	5.1	24	9800	650	--	--	--	--
SEP.										
27...	1230	3.0	11.0	13	150	40	12	1.8	2.8	.9
27...	1240	83	5.0	24	8800	560	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
19...	33	27	2.8	1.1	.1	.67	.010	.17	.01
19...	82	67	--	--	--	2.5	.010	2.3	.03
JUNE									
07...	34	28	--	--	--	.32	.000	.06	.00
07...	88	72	--	--	--	2.6	.000	2.6	.02
AUG.									
16...	39	32	--	--	--	.46	.000	.13	.03
16...	83	68	--	--	--	3.3	.010	2.3	.02
SEP.									
27...	41	34	3.6	.0	--	.18	.000	.04	.02
27...	85	70	--	--	--	.38	.000	.17	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
19...	.010	.070	71	47	21	0	57	7.5	24
19...	.61	.68	--	--	--	--	157	7.1	--
JUNE									
07...	.000	.020	--	--	--	--	56	7.6	--
07...	.48	.72	--	--	--	--	175	7.0	--
AUG.									
16...	.000	.030	--	--	--	--	69	7.9	--
16...	.59	.82	--	--	--	--	170	7.2	--
SEP.									
27...	.000	.030	--	54	37	4	70	--	10
27...	.050	.070	--	--	--	--	175	--	--

12409000 COLVILLE RIVER AT KETTLE FALLS, WASH.

LOCATION.--Lat 48°35'43", long 118°03'30", in NW¼NW¼ sec.29, T.36 N., R.38 E., Stevens County, at county road bridge 0.1 mile upstream from Washington Water Power Company's plant, 0.2 mile upstream from gaging station, 1.0 mile south of town of Kettle Falls and at mile 5.2.

DRAINAGE AREA.--1,007 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1963, October 1963 to September 1970 (partial-record station), October 1971 to September 1972 (discontinued).
Water temperatures: November 1969 to June 1971, at site 0.2 mile downstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
13...	1500	127	46	16	6.4	2.7	226	185	15	2.4	.15
20...	1335	178	45	16	6.1	2.4	215	176	--	6.1	.12
NOV.											
10...	1345	164	46	16	6.4	2.4	212	174	32	2.1	.14
17...	1500	170	42	15	6.4	2.6	208	171	16	2.0	.42
MAR.											
15...	1400	732	33	9.6	5.2	2.2	142	116	16	1.7	.92
29...	1400	708	34	9.9	4.9	1.9	138	113	17	1.4	.40
APR.											
12...	1445	620	32	9.4	4.9	1.6	140	115	14	1.3	.42
26...	1340	540	32	9.3	4.0	2.4	149	122	13	1.6	.40
MAY											
10...	1400	980	29	8.3	4.0	1.6	130	107	9.0	2.0	.36
24...	1400	660	31	8.9	4.1	1.4	128	105	9.6	1.7	.46
JUNE											
14...	1345	988	39	11	4.2	1.4	164	135	13	1.0	.52
28...	1410	280	39	11	5.0	1.6	171	140	13	1.2	.50
JULY											
12...	1500	164	42	13	5.8	2.0	203	167	14	2.0	.17
26...	1320	105	45	14	5.8	2.0	198	162	16	2.0	.30
AUG.											
23...	1430	110	45	15	6.7	2.4	209	171	17	2.0	.34
SEP.											
13...	1450	81	46	16	7.1	2.3	217	178	15	2.1	.26
27...	1310	132	41	15	7.1	2.5	201	165	16	2.1	.31

12409000 COLVILLE RIVER AT KETTLE FALLS, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
13...	.010	.06	.24	.020	.040	180	0	362	8.2	10.2
20...	.010	.04	.22	.010	.050	180	2	345	8.6	6.3
NOV.										
10...	.010	.06	.40	.080	.11	180	7	325	7.9	3.4
17...	.010	.13	.35	.050	.080	170	0	345	8.1	4.0
MAR.										
15...	.010	.31	.48	.020	.19	120	5	259	7.8	5.6
29...	.030	.18	.33	.010	.10	130	12	251	8.0	6.8
APR.										
12...	.010	.10	.21	.020	.080	120	4	242	8.0	5.8
26...	.010	.07	.18	.020	.10	120	0	245	8.0	9.4
MAY										
10...	.010	.09	.16	.020	.070	110	0	241	7.9	11.6
24...	.020	.08	.19	.020	.070	110	9	242	7.7	11.3
JUNE										
14...	.010	.12	.19	.030	.070	140	8	305	8.0	15.0
28...	.010	.10	.14	.010	.040	140	2	309	7.9	15.0
JULY										
12...	.000	.02	.18	.020	.030	160	0	348	8.2	16.3
26...	.010	.05	.26	.010	.060	170	8	365	8.2	20.2
AUG.										
23...	.010	.07	.19	.040	.080	170	3	388	8.0	18.9
SEP.										
13...	.000	.05	.15	.020	.040	180	3	368	8.2	16.2
27...	.050	.07	.16	.050	.060	160	0	347	8.2	7.6

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT.										
13...	10	2	10.0	600	3	--	1	0	.2	10
20...	17	3	11.1	8000	5	--	1	2	.5	0
NOV.										
10...	21	4	11.9	500	0	--	9	2	.4	30
17...	22	5	12.2	250	7	--	0	0	.8	40
MAR.										
15...	52	40	11.7	140	--	0	7	56	2.3	40
29...	45	21	12.2	320	--	0	2	6	.1	10
APR.										
12...	38	16	11.2	1600	--	0	2	3	.6	7
26...	37	15	11.2	300	--	0	2	2	.2	20
MAY										
10...	39	14	10.5	400	--	1	2	5	.5	40
24...	46	17	10.1	700	--	0	4	2	.2	20
JUNE										
14...	27	8	9.7	900	--	0	1	2	.6	20
28...	40	3	9.3	500	--	0	1	5	.8	30
JULY										
12...	23	3	9.0	1600	--	0	2	2	.1	0
26...	18	2	8.2	175	--	0	1	2	.3	0
AUG.										
23...	21	5	9.8	700	--	0	2	2	.5	10
SEP.										
13...	17	4	--	--	--	0	1	2	.7	0
27...	24	4	10.8	800	--	0	150	7	.7	180

12409900 NORTH TWIN LAKE NEAR INCHELIUM, WASH.

LOCATION.--Lat 48°16'47", long 118°22'45", in NW¼NE¼ sec.15, T.32 N., R.35 E., Ferry County, 8.7 miles west of Inchelium.

DRAINAGE AREA.--30.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.											
23...	0850	--	.6	--	--	--	--	--	--	--	--
23...	0915	--	4.9	--	--	--	--	--	--	--	--
APR.											
13...	1020	3.0	5.5	19	60	10	6.7	1.4	4.0	1.1	35
13...	1030	44	5.0	20	290	40	--	--	--	--	35
JUNE											
09...	1010	3.0	21.0	18	40	0	--	--	--	--	33
09...	1020	46	6.4	20	210	200	--	--	--	--	36
AUG.											
18...	1130	3.0	21.0	18	40	25	--	--	--	--	33
18...	1140	45	6.8	21	1000	420	--	--	--	--	38
29...	1630	--	22.8	--	--	--	--	--	--	--	--
SEP.											
29...	0825	3.0	12.8	18	60	0	7.6	1.5	3.6	.8	34
29...	0835	45	6.8	22	3100	510	--	--	--	--	40

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAR.											
23...	--	--	--	--	.25	.000	.07	.06	--	.010	--
23...	--	--	--	--	.33	.000	.09	.03	--	.010	--
APR.											
13...	29	2.3	1.3	1.1	.35	.010	.13	.08	.000	.020	77
13...	29	--	--	--	.48	.010	.12	.08	.000	.020	--
JUNE											
09...	27	--	--	--	.27	.000	.02	.02	.000	.020	--
09...	30	--	--	--	.30	.010	.07	.09	.000	.010	--
AUG.											
18...	27	--	--	--	.35	.000	.03	.02	.000	.010	--
18...	31	--	--	--	.67	.000	.14	.02	.010	.050	--
29...	--	--	--	--	--	--	--	--	--	--	--
SEP.											
29...	28	3.6	.2	--	.38	.000	.10	.01	.000	.030	--
29...	33	--	--	--	.89	.000	.40	.01	.060	.18	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAR.											
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
APR.											
13...	54	22	0	62	7.0	--	--	--	--	--	30
13...	--	--	--	62	6.9	--	--	--	--	--	--
JUNE											
09...	--	--	--	58	7.6	--	--	--	--	--	--
09...	--	--	--	64	7.2	--	--	--	--	--	--
AUG.											
18...	--	--	--	57	7.6	--	--	--	--	--	--
18...	--	--	--	70	7.1	--	--	--	--	--	--
29...	--	--	--	--	--	0	0	6	.4	0	--
SEP.											
29...	52	25	0	58	--	0	1	2	.1	10	8
29...	--	--	--	70	--	--	--	--	--	--	--

12409920 SOUTH TWIN LAKE NEAR INCHELIUM, WASH.

LOCATION.--Lat 48°15'25", long 118°22'32", in NE¼SE¼ sec.22, T.32 N., R.35 E., Ferry County, 9.0 miles west of Inchelium.

DRAINAGE AREA.--36.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.											
23...	0815	--	4.5	--	--	--	--	--	--	--	--
APR.											
13...	1200	3.0	6.2	1.9	30	0	13	2.4	5.0	1.4	68
13...	1210	50	5.1	2.0	150	40	--	--	--	--	63
JUNE											
09...	0905	3.0	21.0	1.1	30	10	--	--	--	--	67
09...	0915	52	7.0	4.1	970	380	--	--	--	--	67
AUG.											
18...	0920	3.0	20.2	.4	60	0	--	--	--	--	56
18...	0930	50	7.0	7.7	3600	600	--	--	--	--	76
29...	1615	--	24.0	--	--	--	--	--	--	--	--
SEP.											
28...	1750	3.0	13.1	.9	40	0	13	2.5	4.3	1.2	58
28...	1800	47	7.3	6.2	2500	560	--	--	--	--	75

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAR.											
23...	--	--	--	--	.75	.000	.16	.04	--	.040	--
APR.											
13...	56	1.3	1.1	.9	2.6	.000	.77	.04	.010	.050	92
13...	52	--	--	--	.90	.000	.70	.04	.010	.040	--
JUNE											
09...	55	--	--	--	1.3	.000	.15	.02	.000	.020	--
09...	55	--	--	--	1.3	.000	1.2	.03	.13	.22	--
AUG.											
18...	46	--	--	--	.74	.000	.08	.02	.000	.010	--
18...	62	--	--	--	3.7	.000	3.0	.03	.77	.95	--
29...	--	--	--	--	--	--	--	--	--	--	--
SEP.											
28...	48	2.8	.4	--	.55	.010	.04	.02	.000	.030	--
28...	62	--	--	--	4.0	.000	.46	.02	.49	.58	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAR.											
23...	--	--	--	--	--	--	--	--	--	--	--
APR.											
13...	60	42	0	100	7.4	--	--	--	--	--	33
13...	--	--	--	102	7.2	--	--	--	--	--	--
JUNE											
09...	--	--	--	100	9.0	--	--	--	--	--	--
09...	--	--	--	118	7.5	--	--	--	--	--	--
AUG.											
18...	--	--	--	95	9.3	--	--	--	--	--	--
18...	--	--	--	149	7.1	--	--	--	--	--	--
29...	--	--	--	--	--	0	0	4	.5	0	--
SEP.											
28...	54	43	0	91	--	0	1	0	.1	0	12
28...	--	--	--	131	--	--	--	--	--	--	--

12410050 ROUND LAKE NEAR INCHELIUM, WASH.

LOCATION.--Lat 48°17'33", long 118°19'04", in NE¼NW¼ sec.7, T.32 N., R.36 E., Ferry County, 5.8 miles west of Inchelium.

DRAINAGE AREA.--5.02 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.											
23...	0945	--	4.9	--	--	--	--	--	--	--	--
APR.											
11...	1200	3.0	6.0	19	0	0	53	8.5	7.5	1.4	198
11...	1220	30	6.0	19	10	170	--	--	--	--	199
JUNE											
08...	1700	3.0	21.9	16	10	20	--	--	--	--	200
08...	1710	30	8.0	20	10	90	--	--	--	--	204
AUG.											
17...	1820	3.0	21.0	15	20	33	--	--	--	--	191
17...	1830	30	10.2	20	30	880	--	--	--	--	204
29...	0915	--	22.0	--	--	--	--	--	--	--	--
SEP.											
28...	1600	3.0	13.1	17	10	80	50	9.3	7.2	1.1	199
28...	1615	30	11.2	19	60	700	--	--	--	--	201

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAR.											
23...	--	--	--	--	.21	.000	.04	.04	--	.000	--
APR.											
11...	162	18	1.3	.2	--	--	--	--	--	--	258
11...	163	--	--	.0	.81	.000	.16	.02	.000	.020	--
JUNE											
08...	164	--	--	--	.28	.010	.03	.01	.000	.020	--
08...	167	--	--	--	.55	.001	.10	.01	.000	.030	--
AUG.											
17...	157	--	--	--	.31	.000	.02	.02	.000	.010	--
17...	167	--	--	--	.52	.000	.06	.03	.000	.010	--
29...	--	--	--	--	--	--	--	--	--	--	--
SEP.											
28...	163	16	.6	--	.47	.000	.04	.02	.000	.020	--
28...	165	--	--	--	.24	.000	.04	.02	.000	.030	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAR.											
23...	--	--	--	--	--	--	--	--	--	--	--
APR.											
11...	206	170	5	335	8.1	--	--	--	--	--	31
11...	--	--	--	335	8.2	--	--	--	--	--	--
JUNE											
08...	--	--	--	320	8.5	--	--	--	--	--	--
08...	--	--	--	332	8.5	--	--	--	--	--	--
AUG.											
17...	--	--	--	320	8.4	--	--	--	--	--	--
17...	--	--	--	350	7.9	--	--	--	--	--	--
29...	--	--	--	--	--	0	0	6	.5	0	--
SEP.											
28...	199	160	0	300	--	0	1	2	.2	20	11
28...	--	--	--	315	--	--	--	--	--	--	--

12427500 DIAMOND LAKE NEAR NEWPORT, WASH.

LOCATION.--Lat 48°07'08", long 117°13'05", in SE¼SE¼ sec.3, T.30 N., R.41 E., Pend Oreille County, 8.0 miles southwest of Newport.

DRAINAGE AREA.--17.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for the lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)
APR.										
17...	1440	3.0	6.4	.6	20	0	6.7	1.7	3.6	1.4
17...	1450	51	6.2	.6	70	20	--	--	--	--
JUNE										
05...	1630	3.0	20.0	.4	40	0	--	--	--	--
05...	1640	51	9.0	.9	70	20	--	--	--	--
AUG.										
14...	1600	3.0	23.5	.4	50	0	--	--	--	--
14...	1605	49	10.2	.4	50	0	--	--	--	--
SEP.										
25...	1715	3.0	14.0	.5	90	10	7.1	1.9	3.6	1.4
25...	1730	50	11.0	1.2	1700	230	--	--	--	--

DATE	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)
APR.									
17...	37	30	1.0	1.1	.2	.64	.010	.14	.06
17...	37	30	--	--	--	.67	.000	.10	.05
JUNE									
05...	38	31	--	--	--	.50	.000	.08	.02
05...	36	30	--	--	--	.46	.000	.15	.04
AUG.									
14...	38	31	--	--	--	.75	.010	.14	.04
14...	37	30	--	--	--	.60	.000	.04	.06
SEP.									
25...	38	31	2.9	.1	--	.35	.000	.02	.02
25...	42	34	--	--	--	.63	.000	.19	.02

DATE	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	SUSPENDED SOLIDS (MG/L)
APR.									
17...	.000	.35	48	35	24	0	65	8.0	32
17...	.000	.060	--	--	--	--	65	8.1	--
JUNE									
05...	.000	.010	--	--	--	--	66	8.2	--
05...	.000	.020	--	--	--	--	68	7.8	--
AUG.									
14...	.000	.010	--	--	--	--	65	8.2	--
14...	.000	.010	--	--	--	--	68	7.8	--
SEP.									
25...	.000	.020	--	36	26	0	69	--	8
25...	.000	.030	--	--	--	--	74	--	--

12433000 SPOKANE RIVER AT LONG LAKE, WASH.

LOCATION.--Lat 47°50'18", long 117°51'05", in NW¼SE¼ sec.14, T.27 N., R.39 E., Lincoln County, at bridge on Spring Creek Road (State Highway 231), 0.6 mile downstream from gaging station at Long Lake powerhouse, 0.8 mile upstream from Chamokane Creek, 12 miles north of Reardon, and at mile 33.3.

DRAINAGE AREA.--6,020 sq mi, approximately (at gaging station).

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1972.
Water temperatures: July 1959 to September 1962, October 1966 to September 1970.

REMARKS.--No inflow between sampling point and gaging station. Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
13...	1700	3760	18	7.0	3.3	1.9	85	70	9.8	2.6	.12
20...	0840	3770	19	7.0	3.5	1.4	92	75	11	3.4	--
NOV.											
10...	0825	4720	18	7.1	3.4	1.4	85	70	2.9	2.3	.30
17...	1030	4900	17	6.8	3.7	1.5	83	68	11	3.0	.69
DEC.											
15...	0930	5020	16	5.9	3.4	1.1	76	62	13	2.2	.47
JAN.											
12...	0845	5080	15	5.5	4.1	1.8	71	58	11	2.2	--
FEB.											
09...	0930	6980	11	3.9	2.8	1.7	48	39	10	1.8	.47
23...	0850	11400	12	4.0	3.3	1.9	47	39	11	2.9	.74
MAR.											
15...	0845	33300	7.6	2.3	2.4	1.1	33	27	11	.9	.57
29...	0845	26800	7.7	2.2	1.9	1.1	29	24	11	.9	.38
APR.											
12...	0930	22000	7.5	2.3	2.2	1.0	32	26	10	1.3	.47
26...	0830	14400	7.8	2.7	1.7	1.3	35	29	8.8	1.0	.30
MAY											
10...	0845	23800	7.4	2.6	2.0	1.0	34	28	7.8	2.0	.34
24...	0900	33200	6.1	1.7	1.7	.6	24	20	6.2	.4	.26
JUNE											
14...	0850	24000	5.9	1.8	.8	.6	28	23	6.8	.7	.54
28...	0830	9150	7.6	2.3	1.5	.7	38	31	6.0	.6	.30
JULY											
12...	0900	5700	8.9	2.8	1.8	.9	35	29	11	2.0	.58
26...	0815	5200	15	5.4	2.5	1.1	65	53	7.5	2.0	.58
AUG.											
09...	1240	3750	15	5.5	3.6	1.8	68	56	9.1	2.6	.74
23...	0845	3220	17	6.7	3.2	1.2	74	61	17	2.0	.68
SEP.											
13...	0930	2660	19	7.4	3.6	1.4	88	72	9.4	2.6	.48
27...	0800	2680	19	8.0	3.5	1.4	95	78	11	2.0	.58

12433000 SPOKANE RIVER AT LONG LAKE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
13...	.020	.03	.36	.040	.060	74	4	160	7.9	13.7
20...	.020	.39	.30	.020	.060	76	1	160	7.7	12.2
NOV.										
10...	.010	.27	.47	.060	.070	74	4	152	7.5	8.2
17...	.020	.33	.59	.060	.090	70	2	160	8.0	6.7
DEC.										
15...	.010	.27	.54	.050	.080	64	2	150	7.1	2.9
JAN.										
12...	.010	.25	.55	.060	.080	60	2	145	7.5	2.4
FEB.										
09...	.010	.31	.14	.040	.13	43	4	83	--	1.1
23...	.010	.54	1.1	.050	.19	46	8	112	7.6	3.0
MAR.										
15...	.010	.11	.29	.020	.090	28	1	76	7.3	4.4
29...	.060	.18	.18	.010	.080	28	5	72	7.4	4.0
APR.										
12...	.010	.09	.18	.000	.25	28	2	74	7.4	5.9
26...	.010	.13	.16	.000	.10	31	2	78	7.4	7.2
MAY										
10...	.010	.07	.11	.000	.050	29	1	70	7.3	10.5
24...	.010	.04	.04	.000	.050	22	3	59	7.2	11.8
JUNE										
14...	.010	.10	.07	.000	.050	22	0	60	7.5	14.4
28...	.010	.06	.15	.000	.040	28	0	74	7.6	16.0
JULY										
12...	.010	.15	.20	.010	.030	34	5	101	7.2	17.3
26...	.060	.17	.37	.020	.050	60	6	144	7.6	16.5
AUG.										
09...	.010	.10	.38	.010	.030	60	4	155	7.4	20.2
23...	.020	.27	.45	.030	.060	70	9	180	7.5	18.4
SEP.										
13...	.020	.16	.49	.060	--	78	6	178	7.4	17.5
27...	.020	.15	.56	.050	.070	80	2	191	7.5	13.3

12433000 SPOKANE RIVER AT LONG LAKE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
13...	15	2	4.9	800	3	--	1	2	.1	30
20...	10	1	6.7	50	4	--	2	2	.5	20
NOV.										
10...	13	2	7.5	100	0	--	0	0	.1	70
17...	9	3	8.0	20	--	--	--	--	--	--
DEC.										
15...	18	2	--	20	0	--	8	2	.3	150
JAN.										
12...	26	3	9.9	20	--	4	1	5	.1	140
FEB.										
09...	71	25	13.1	400	--	0	2	4	.3	230
23...	123	45	14.2	200	--	0	1	5	1.6	250
MAR.										
15...	23	10	16.9	1400	--	0	1	10	.3	380
29...	35	10	16.3	600	--	0	2	28	.1	420
APR.										
12...	34	16	14.5	1100	--	0	3	27	.9	330
26...	--	13	14.1	320	--	0	2	16	.3	260
MAY										
10...	21	8	13.1	400	--	0	2	13	.0	190
24...	15	7	12.4	1600	--	0	1	11	.2	170
JUNE										
14...	17	4	12.4	1200	--	0	2	7	.1	130
28...	15	2	9.8	>100	--	0	6	25	.7	140
JULY										
12...	14	2	8.8	30	--	0	2	3	.2	120
26...	9	1	7.4	35	--	0	1	2	.4	60
AUG.										
09...	13	1	7.4	--	--	0	20	67	1.0	80
23...	21	2	9.0	350	--	0	1	2	.5	30
SEP.										
13...	10	3	--	--	--	0	1	5	.4	40
27...	10	2	4.6	2200	--	0	3	0	.2	20

12433950 CRAWFISH LAKE NEAR DISAUTEL, WASH.

LOCATION.--Lat 48°28'47", long 119°12'36", in NW¼NW¼ sec.5, T.34 N., R.29 E., Okanogan County, 8.5 miles north of Disautel.

DRAINAGE AREA.--0.83 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAY											
05...	1120	3.0	5.7	8.1	70	0	3.6	1.0	3.3	1.5	30
05...	1130	30	5.0	12	350	90	--	--	--	--	34
24...	1410	3.0	11.2	8.6	300	10	--	--	--	--	28
24...	1420	27	6.0	9.7	2100	450	--	--	--	--	34
JULY											
13...	1500	3.0	17.2	5.6	120	40	--	--	--	--	29
13...	1505	27	7.9	10	2100	720	--	--	--	--	32
SEP.											
08...	0900	3.0	16.0	8.0	280	0	3.9	1.2	3.[illegible]	1.3	28
08...	0910	30	9.9	11	9400	1100	--	--	-	--	37

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAY											
05...	25	1.1	.7	.0	.50	.010	.19	.04	.020	.030	52
05...	28	--	--	--	3.1	.000	2.0	.04	.11	.20	--
24...	23	--	--	--	.57	.000	.17	.05	.000	.010	--
24...	28	--	--	--	1.2	.010	.47	.07	.000	.040	--
JULY											
13...	24	--	--	--	.56	--	.06	.03	.000	.020	--
13...	26	--	--	--	1.6	--	.43	.03	.000	.040	--
SEP.											
08...	23	2.0	.9	--	.49	.000	.08	.00	.000	.010	--
08...	30	--	--	--	2.4	.000	1.3	.02	.010	.11	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAY											
05...	34	13	0	59	6.5	--	--	--	--	--	--
05...	--	--	--	84	6.1	--	--	--	--	--	--
24...	--	--	--	45	7.7	--	--	--	--	--	--
24...	--	--	--	56	7.4	--	--	--	--	--	--
JULY											
13...	--	--	--	44	7.9	0	1	3	.2	0	--
13...	--	--	--	76	6.9	--	--	--	--	--	--
SEP.											
08...	35	15	0	47	7.7	0	4	4	.1	10	17
08...	--	--	--	93	7.1	--	--	--	--	--	--

12434050 GOLD LAKE NEAR WEST FORK, WASH.

LOCATION.--Lat 48°22'15", long 118°55'16", in SE¼SW¼ sec.9, T.33 N., R.31 E., Okanogan County, 10 miles southwest of West Fork.

DRAINAGE AREA.--3.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAY											
02...	1415	3.0	9.0	18	10	0	6.2	1.0	2.7	.8	29
02...	1440	40	4.4	17	170	80	--	--	--	--	43
23...	1435	3.0	14.0	17	50	10	--	--	--	--	28
23...	1445	40	4.8	18	760	240	--	--	--	--	49
JULY											
11...	1915	3.0	18.5	17	40	0	--	--	--	--	28
11...	1920	40	5.0	17	50	20	--	--	--	--	35
AUG.											
30...	1510	3.0	20.5	15	20	20	7.3	1.2	2.8	.7	31
30...	1520	39	5.7	17	--	200	--	--	--	--	52

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAY											
02...	24	5.0	.4	.3	2.4	.000	.29	.02	.000	.040	64
02...	35	--	--	--	3.1	.000	.09	.02	.010	.13	--
23...	23	--	--	--	.82	.000	.06	.02	.000	.020	--
23...	40	--	--	--	.90	.000	.38	.07	.010	.040	--
JULY											
11...	23	--	--	--	.51	--	.14	.03	.000	.010	--
11...	29	--	--	--	.30	--	.23	.03	.000	.010	--
AUG.											
30...	25	6.6	.0	--	.27	.000	.01	.01	.000	.000	--
30...	43	--	--	--	1.2	.000	.39	.01	.000	.11	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAY											
02...	49	20	0	57	7.1	--	--	--	--	--	--
02...	--	--	--	84	6.8	--	--	--	--	--	--
23...	--	--	--	56	7.3	--	--	--	--	--	--
23...	--	--	--	92	6.9	--	--	--	--	--	--
JULY											
11...	--	--	--	62	7.6	0	1	2	.1	10	--
11...	--	--	--	73	7.3	--	--	--	--	--	--
AUG.											
30...	49	23	0	63	8.3	0	1	6	.6	0	20
30...	--	--	--	104	7.5	--	--	--	--	--	--

12434500 SANPOIL RIVER NEAR KELLER, WASH.

LOCATION.--Lat 48°05'04", long 118°41'25", in NW¼SW¼ sec.20, T.30 N., R.33 E., Ferry County, at road bridge 0.4 mile upstream from Jack Creek, 0.6 mile northwest of Keller, 2.4 miles downstream from gaging station, and at mile 11.7.

DRAINAGE AREA.--About 889 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1966 (partial-record station published as 12435000), October 1971 to September 1972.
Water temperatures: July 1968 to September 1970, at site 2.4 miles upstream.

REMARKS.--Samples taken Mar. 15, 24, Apr. 6, 19, May 15, 24, June 16, July 12, 27, Aug. 16, and Sept. 13, 19, were obtained at gaging station 2.4 miles upstream.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
12...	1730	50	27	6.4	6.7	2.0	118	97	16	1.3	.12
19...	1440	55	24	5.8	6.2	1.2	105	86	15	2.2	.11
NOV.											
09...	1440	53	27	6.2	6.4	1.4	110	90	15	1.0	.09
16...	1445	50	25	6.0	6.8	1.5	110	90	15	1.4	.26
FEB.											
22...	1400	--	26	6.1	6.3	1.6	104	85	18	1.8	.22
MAR.											
14...	1400	1100	14	3.1	4.3	1.3	58	48	8.1	.9	.91
15...	1005	931	--	--	--	--	--	--	--	--	--
24...	1040	894	14	3.5	4.8	1.0	61	50	9.1	1.4	.85
28...	1400	590	16	3.9	4.8	1.3	67	55	10	.9	.27
APR.											
06...	1400	1150	--	--	--	--	--	--	--	--	--
11...	1530	908	14	3.6	5.0	1.2	64	52	--	.7	.23
19...	1055	705	--	--	--	--	--	--	--	--	--
25...	1515	575	16	4.0	4.9	1.6	72	59	9.3	.9	.35
MAY											
09...	1520	698	14	3.4	4.5	1.2	63	52	7.3	1.4	.61
15...	1040	698	--	--	--	--	--	--	--	--	--
23...	1515	1020	13	3.2	5.2	1.0	59	48	6.9	.8	.41
24...	1000	1000	--	--	--	--	--	--	--	--	--
JUNE											
13...	1500	420	19	4.4	5.2	1.2	82	67	14	.7	.77
16...	1440	357	--	--	--	--	--	--	--	--	--
16...	1650	357	20	4.4	5.2	1.3	86	71	10	.4	.66
27...	1450	255	22	4.7	6.5	1.8	90	74	11	.9	.65
JULY											
11...	1540	131	24	5.2	6.6	1.5	105	86	12	1.0	.50
12...	0910	129	--	--	--	--	--	--	--	--	--
25...	1530	80	26	5.7	6.4	1.6	103	84	14	2.0	.76
27...	1200	76	--	--	--	--	--	--	--	--	--
AUG.											
09...	1500	42	26	5.9	6.5	1.4	109	89	14	.9	.28
16...	1345	77	--	--	--	--	--	--	--	--	--
22...	1520	69	25	6.0	6.6	1.4	108	89	15	.8	.50
SEP.											
12...	1500	41	26	6.3	6.8	1.3	111	91	15	1.0	.09
13...	1720	42	24	5.9	6.7	1.2	110	90	15	1.0	.05
19...	1100	45	--	--	--	--	--	--	--	--	--
26...	1500	66	25	6.1	6.6	1.3	110	90	15	.0	.16

12434500 SANPOIL RIVER NEAR KELLER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.											
12...	.000	.03	.02	.020	.030	94	0	205	8.6	12.2	12
19...	.000	.06	.07	.010	.10	84	0	190	7.9	7.2	14
NOV.											
09...	.000	.00	.07	.020	.030	93	3	155	7.7	3.2	15
16...	.000	.07	.07	.030	.040	87	0	210	7.8	6.5	6
FEB.											
22...	.000	.03	.12	.020	.020	90	5	205	7.9	3.6	15
MAR.											
14...	.020	.27	.28	.030	.19	48	0	113	7.6	4.0	71
15...	--	--	--	--	--	--	--	--	--	3.5	--
24...	.010	.09	.14	--	.090	49	0	119	--	3.6	--
28...	.020	.01	.13	.010	.080	55	1	133	7.7	5.8	52
APR.											
06...	--	--	--	--	--	--	--	--	--	7.0	--
11...	.010	.03	.06	.030	.070	50	0	122	7.9	6.6	53
19...	--	--	--	--	--	--	--	128	--	6.3	--
25...	.010	.04	.02	.020	.060	56	0	135	7.7	8.9	40
MAY											
09...	.010	.12	.06	.010	.050	48	0	113	7.7	9.4	58
15...	--	--	--	--	--	--	--	106	--	12.0	--
23...	.020	.07	.04	.020	.070	46	0	120	7.6	12.5	78
24...	--	--	--	--	--	--	--	--	--	8.5	--
JUNE											
13...	.000	.13	.05	.040	.060	66	0	161	7.9	13.8	49
16...	--	--	--	--	--	--	--	152	--	16.5	--
16...	.010	.16	.05	.040	.060	68	0	153	--	--	--
27...	.000	.08	.07	.020	.040	74	0	180	7.9	17.0	40
JULY											
11...	.000	.05	.07	.030	.040	81	0	211	8.3	18.0	22
12...	--	--	--	--	--	--	--	180	--	15.0	--
25...	.000	.11	.08	.010	.030	88	4	148	8.2	21.9	20
27...	--	--	--	--	--	--	--	190	--	18.4	--
AUG.											
09...	.000	.03	.09	.030	.040	89	0	221	7.9	25.2	16
16...	--	--	--	--	--	--	--	186	--	18.4	--
22...	.000	.13	.03	.002	.003	87	0	221	8.0	20.0	21
SEP.											
12...	.000	.01	.03	.010	--	91	0	215	8.6	16.0	16
13...	.000	.02	.00	.020	--	84	0	200	--	17.2	--
19...	--	--	--	--	--	--	--	--	--	11.1	--
26...	.000	.02	.02	.020	.020	87	0	210	8.2	8.4	15

12434500 SANPOIL RIVER NEAR KELLER, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT.										
12...	1	10.4	--	200	3	--	0	0	.2	10
19...	3	11.0	--	1200	3	--	1	2	.1	0
NOV.										
09...	1	12.7	--	100	0	--	0	0	4.0	20
16...	2	12.1	--	150	--	--	--	--	--	--
FEB.										
22...	2	13.2	--	60	--	0	0	2	1.3	130
MAR.										
14...	35	12.5	--	1300	--	0	1	2	1.1	0
15...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
28...	5	11.7	--	600	--	0	1	0	.0	20
APR.										
06...	32	--	--	--	--	--	--	--	--	--
11...	9	11.6	--	350	--	0	2	3	.5	10
19...	6	--	--	<1	--	--	--	--	--	--
25...	5	11.3	--	150	--	0	2	2	.3	20
MAY										
09...	7	12.2	--	500	--	0	1	0	.0	20
15...	13	--	--	--	--	--	--	--	--	--
23...	9	10.0	--	--	--	0	1	1	.3	10
24...	6	--	--	--	--	--	--	--	--	--
JUNE										
13...	4	12.3	--	1200	--	[illegible]	4	0	1.0	20
16...	3	--	--	--	--	--	--	--	--	--
16...	--	--	27	--	--	0	1	1	.1	10
27...	2	9.3	--	150	--	0	20	100	2.5	[illegible]
JULY										
11...	2	9.0	--	600	--	0	4	2	2.8	[illegible]
12...	3	--	--	--	--	--	--	--	-	--
25...	1	9.5	--	150	--	0	1	2	.3	0
27...	2	--	--	--	--	--	--	--	--	--
AUG.										
09...	1	9.9	--	--	--	0	2	1	.2	10
16...	3	--	--	--	--	--	--	--	--	--
22...	1	5.2	--	500	--	0	0	2	.4	0
SEP.										
12...	1	9.6	--	--	--	0	0	2	.2	0
13...	2	--	3	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
26...	1	10.9	--	190	--	0	1	0	.2	0

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WASH.

LOCATION.--Lat 47°57'56", long 118°58'54", in SE¼ sec.36, T.29 N., R.30 E., Okanogan County, at bridge on State Highway 155, 0.6 mile downstream from Grand Coulee Dam and at mile 596.3.

DRAINAGE AREA.--74,700 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
12...	1610	72800	19	4.3	1.2	1.3	78	64	10	1.0	.12
19...	1330	84500	19	4.1	1.3	.2	70	57	14	1.6	.09
NOV.											
09...	1320	84000	20	4.2	1.3	.8	76	62	12	.4	.08
16...	1400	79700	19	4.4	1.7	.8	73	60	12	1.2	.13
DEC.											
14...	1530	108000	20	4.4	1.7	.9	75	62	14	1.1	.16
JAN.											
11...	1530	99800	21	4.4	1.7	1.1	79	65	14	.9	.70
FEB.											
08...	1330	89200	22	4.7	1.5	2.2	80	66	14	1.6	.06
22...	1300	116000	22	4.8	1.9	1.2	77	63	14	2.1	.04
MAR.											
14...	1315	109000	21	4.6	2.3	.9	80	66	16	.8	.28
28...	1250	188000	22	4.7	2.5	1.0	73	60	17	1.2	.18
APR.											
11...	1430	173000	19	4.7	2.5	.9	75	62	15	.9	.10
25...	1410	80200	21	4.9	1.9	1.3	77	63	16	1.4	.45
MAY											
09...	1400	142000	20	5.1	2.3	.9	78	64	15	.8	.17
23...	1400	227000	18	4.0	2.1	.6	64	52	12	.2	.37
JUNE											
13...	1355	329000	18	3.9	1.3	.6	73	60	10	2.2	.39
27...	1310	334000	18	4.0	1.4	.7	72	59	10	.4	.42
JULY											
11...	1420	190000	18	3.9	1.0	.7	66	54	10	1.0	.44
25...	1400	159000	19	4.0	1.1	.7	66	54	9.7	1.0	.48
AUG.											
09...	1600	153000	18	3.7	1.4	.7	66	54	9.0	.2	.16
22...	1400	107000	18	3.7	1.3	.6	67	55	9.6	.8	.52
SEP.											
12...	1400	80000	19	3.6	1.3	.7	67	55	9.1	1.8	.42
26...	1345	101000	18	3.9	1.1	.6	69	57	12	2.4	.93

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WASH.-- Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.											
12...	.000	.09	.09	.010	.020	98	65	1	140	8.1	17.2
19...	.000	.02	.09	.010	.030	120	64	7	137	7.8	16.3
NOV.											
09...	.000	.00	.18	.020	.040	92	67	5	190	7.8	12.8
16...	.000	.08	.20	.030	.040	88	66	6	150	7.5	12.2
DEC.											
14...	.010	.03	.19	.010	.050	82	68	7	160	7.2	7.3
JAN.											
11...	.010	.11	.19	.030	.030	84	71	6	150	7.8	39.0
FEB.											
08...	.010	.02	.06	.030	.040	88	74	9	155	--	2.1
22...	.010	.02	.26	.040	.040	134	75	12	160	7.9	2.9
MAR.											
14...	.010	.10	.34	.030	.070	86	71	6	165	7.7	3.3
28...	.030	.08	.22	.010	.080	122	74	14	157	7.5	4.8
APR.											
11...	.010	.01	.13	.020	.060	180	67	5	153	8.0	6.5
25...	.010	.05	.12	.020	.050	116	73	9	155	7.7	8.3
MAY											
09...	.000	.01	.10	.000	.030	128	70	7	157	7.8	10.5
23...	.010	.07	.05	.000	.040	94	61	9	145	7.7	10.9
JUNE											
13...	.000	.07	.07	.010	.040	124	61	1	135	7.7	13.0
27...	.010	.04	.11	.000	.020	120	61	2	143	7.7	12.8
JULY											
11...	.000	.07	.15	.010	.020	92	61	7	148	7.8	13.7
25...	.010	.21	.16	.010	.020	84	64	10	159	7.9	15.9
AUG.											
09...	.010	.01	.14	.010	.020	90	60	6	137	7.6	17.2
22...	.010	.13	.11	.000	.010	100	60	5	143	7.6	16.5
SEP.											
12...	.000	.06	.12	.010	.070	80	62	7	134	7.8	17.3
26...	.010	.13	.10	.010	.010	96	61	4	153	8.1	16.8

12436500 COLUMBIA RIVER AT GRAND COULEE DAM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
12...	10	1	8.1	100	4	--	1	2	.2	20
19...	14	2	8.5	80	4	--	1	0	.2	10
NOV.										
09...	11	2	9.1	40	0	--	9	0	.1	50
16...	12	1	9.5	20	--	--	--	--	--	--
DEC.										
14...	17	2	11.6	34	2	--	3	1	.2	20
JAN.										
11...	12	1	12.1	20	--	0	1	4	.1	30
FEB.										
08...	6	3	13.1	21	--	0	2	2	.7	30
22...	10	3	14.1	20	--	0	1	1	.6	30
MAR.										
14...	11	7	17.3	20	--	0	1	5	.8	100
28...	24	7	16.0	400	--	0	1	6	.0	120
APR.										
11...	15	4	15.6	50	--	0	2	7	.6	90
25...	14	3	13.0	>20	--	0	2	6	.2	60
MAY										
09...	11	3	14.8	<20	--	0	1	3	.0	40
23...	16	4	13.5	--	--	0	0	3	.3	30
JUNE										
13...	17	5	14.9	>40	--	0	2	7	1.0	10
27...	28	1	14.8	100	--	0	3	5	.5	30
JULY										
11...	15	3	14.5	>20	--	0	2	2	.0	30
25...	12	2	12.0	20	--	0	1	4	.4	20
AUG.										
09...	12	1	11.8	400	--	0	2	2	.3	10
22...	16	1	10.3	<400	--	0	2	2	.4	10
SEP.										
12...	11	1	9.2	--	--	0	2	3	.3	20
26...	15	2	8.8	120	--	0	3	1	.2	30

12436540 MCGINNIS LAKE NEAR SEATONS GROVE, WASH.

LOCATION.--Lat 48°01'58", long 118°53'49", in NW¼NE¼ sec.10, T.29 N., R.31 E., Okanogan County, 2.6 miles northeast of Seatons Grove and 7.8 miles southeast of Colville Indian Agency.

DRAINAGE AREA.--4.0 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for the southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.											
24...	1245	--	5.0	--	--	--	--	--	--	--	--
APR.											
12...	1320	3.0	7.0	6.5	10	0	14	3.0	11	2.7	78
12...	1330	40	6.6	6.9	110	10	--	--	--	--	78
MAY											
22...	1445	3.0	15.0	5.1	50	0	--	--	--	--	80
22...	1455	39	8.4	6.7	140	30	--	--	--	--	82
JULY											
10...	1400	3.0	19.5	3.8	50	10	--	--	--	--	79
10...	1405	38	9.0	8.0	220	140	--	--	--	--	78
AUG.											
28...	1415	3.0	22.5	4.0	30	50	13	3.3	11	2.6	80
28...	1420	38	38.0	8.0	210	180	--	--	--	--	83

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAR.											
24...	--	--	--	--	.67	.010	.17	.07	--	.030	--
APR.											
12...	64	2.8	2.0	1.0	.68	.010	.15	.06	.020	.030	132
12...	64	--	--	--	.79	.000	.26	.03	.000	.030	--
MAY											
22...	66	--	--	--	.84	.000	.11	.03	.000	.030	--
22...	67	--	--	--	.84	.000	.28	.03	.000	.030	--
JULY											
10...	65	--	--	--	.61	--	.04	.02	.000	.020	--
10...	64	--	--	--	1.8	--	.60	.03	.020	.080	--
AUG.											
28...	66	3.5	1.4	--	.64	.000	.03	.01	.000	.010	--
28...	68	--	--	--	1.1	.000	.31	.02	.000	.050	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAR.											
24...	--	--	--	--	--	--	--	--	--	--	--
APR.											
12...	81	47	0	128	8.2	--	--	--	--	--	32
12...	--	--	--	130	8.2	--	--	--	--	--	--
MAY											
22...	--	--	--	134	9.2	--	--	--	--	--	--
22...	--	--	--	138	8.1	--	--	--	--	--	--
JULY											
10...	--	--	--	137	9.2	0	1	2	.2	10	--
10...	--	--	--	147	7.5	--	--	--	--	--	--
AUG.											
28...	78	46	0	140	9.2	0	4	7	.4	0	20
28...	--	--	--	146	7.7	--	--	--	--	--	--

12436550 BUFFALO LAKE NEAR SEATONS GROVE, WASH.

LOCATION.--Lat 48°03'16", long 118°52'25", in NW¼SE¼ sec.35, T.30 N., R.31 E., Okanogan County, 4.2 miles northeast of Seatons Grove and 7.1 miles southeast of Colville Indian Agency.

DRAINAGE AREA.--13.7 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for the southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)
MAR.											
24...	1300	--	6.2	--	--	--	--	--	--	--	--
APR.											
12...	0955	3.0	5.5	2.9	10	0	13	2.7	10	3.0	75
12...	1005	111	5.2	3.5	120	20	--	--	--	--	75
MAY											
22...	1650	3.0	14.5	2.8	70	0	--	--	--	--	78
22...	1700	110	6.0	3.8	270	50	--	--	--	--	76
JULY											
10...	1645	3.0	19.2	3.3	40	0	--	--	--	--	73
10...	1655	110	6.0	5.7	720	430	--	--	--	--	76
AUG.											
31...	1000	3.0	20.0	3.3	30	40	12	2.9	9.5	2.3	75
31...	1015	110	6.0	6.7	1900	540	--	--	--	--	79

DATE	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
MAR.											
24...	--	--	--	--	.86	.000	.11	.03	--	.030	--
APR.											
12...	62	2.0	1.9	.6	.47	.010	.07	.02	.000	.010	112
12...	62	--	--	--	.66	.000	.30	.06	.000	.010	--
MAY											
22...	64	--	--	--	.61	.000	.23	.02	.000	.010	--
22...	62	--	--	--	.56	.010	.19	.05	.000	.020	--
JULY											
10...	60	--	--	--	.80	--	.09	.02	.000	.020	--
10...	62	--	--	--	.45	--	.16	.09	.010	.050	--
AUG.											
31...	62	3.4	.8	--	.43	.000	.04	.01	.000	.010	--
31...	65	--	--	--	1.2	.000	.39	.01	.050	.090	--

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	SUS-PENDED SOLIDS (MG/L)
MAR.											
24...	--	--	--	--	--	--	--	--	--	--	--
APR.											
12...	73	44	0	125	8.1	--	--	--	--	--	29
12...	--	--	--	--	8.1	--	--	--	--	--	--
MAY											
22...	--	--	--	128	8.5	--	--	--	--	--	--
22...	--	--	--	129	7.5	--	--	--	--	--	--
JULY											
10...	--	--	--	127	9.2	0	1	1	.2	10	--
10...	--	--	--	133	7.6	--	--	--	--	--	--
AUG.											
31...	71	42	0	128	9.0	0	1	9	.5	0	20
31...	--	--	--	146	7.3	--	--	--	--	--	--

12437530 OWHI LAKE NEAR NESPELEM, WASH.

LOCATION.--Lat 48°13'22", long 118°53'33", in NE¼NE¼ sec.3, T.31 N., R.31 E., Okanogan County, 5.5 miles northeast of Nespelem.

DRAINAGE AREA.--13.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.											
23...	1700	--	3.5	--	--	--	--	--	--	--	--
APR.											
14...	1030	3.0	6.5	7.6	10	10	18	6.0	8.4	1.7	79
14...	1040	72	5.2	9.8	20	20	--	--	--	--	77
MAY											
23...	1025	3.0	13.5	6.7	50	0	--	--	--	--	81
23...	1035	68	6.8	8.4	30	70	--	--	--	--	85
JULY											
11...	1040	3.0	19.0	6.4	30	0	--	--	--	--	96
11...	1050	69	7.0	11	20	140	--	--	--	--	77
AUG.											
30...	1200	3.0	20.8	7.2	20	20	18	6.6	7.8	1.6	78
30...	1210	68	7.0	11	40	160	--	--	--	--	90

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAR.											
23...	--	--	--	--	.71	.000	.09	.05	--	.090	--
APR.											
14...	65	24	.9	1.0	.96	.000	.48	.02	.050	.14	164
14...	63	--	--	--	.95	.010	.38	.06	.060	.16	--
MAY											
23...	66	--	--	--	.68	.010	.13	.07	.040	.070	--
23...	70	--	--	--	1.3	.000	.64	.05	.15	.17	--
JULY											
11...	79	--	--	--	5.6	--	.28	.03	.000	.26	--
11...	63	--	--	--	1.8	--	1.2	.03	.28	.32	--
AUG.											
30...	64	25	.3	--	.60	.000	.04	.02	.000	.010	--
30...	74	--	--	--	3.2	.000	1.5	.02	.68	--	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (UG/L)
MAR.											
23...	--	--	--	--	--	--	--	--	--	--	--
APR.											
14...	106	70	5	167	9.1	--	--	--	--	--	55
14...	--	--	--	172	8.4	--	--	--	--	--	--
MAY											
23...	--	--	--	172	8.6	--	--	--	--	--	--
23...	--	--	--	204	7.7	--	--	--	--	--	--
JULY											
11...	--	--	--	177	9.7	0	3	2	.3	0	--
11...	--	--	--	205	7.4	--	--	--	--	--	--
AUG.											
30...	105	72	8	180	9.6	0	1	12	.4	10	21
30...	--	--	--	200	7.7	--	--	--	--	--	--

12437700 GOOSE LAKE NEAR MONSE, WASH.

LOCATION.--Lat 48°09'37", long 119°19'57", in SE¼NW¼ sec.29, T.31 N., R.28 E., Okanogan County, 16 miles east of Monse.

DRAINAGE AREA.--23.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for the southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.											
25...	1805	--	9.7	--	--	--	--	--	--	--	--
APR.											
21...	0940	3.0	10.8	27	40	10	38	42	150	37	521
21...	0950	5.0	10.8	--	--	--	--	--	--	--	--
MAY											
25...	1540	3.0	17.5	18	60	0	--	--	--	--	514
25...	1550	5.0	17.0	--	--	--	--	--	--	--	--
JULY											
14...	1830	3.0	23.0	13	40	0	--	--	--	--	521
SEP.											
07...	1530	3.0	17.9	20	40	0	16	49	170	42	556

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAR.											
25...	--	--	--	--	1.2	.010	.10	.03	--	.030	--
APR.											
21...	427	180	13	1.3	1.1	.010	.13	.01	.000	.010	868
21...	--	--	--	--	1.0	.010	.11	.01	.000	.010	--
MAY											
25...	422	--	--	--	1.7	.020	.23	.00	.000	.020	--
25...	--	--	--	--	.15	.010	.12	.00	.000	.020	--
JULY											
14...	427	--	--	--	1.8	--	.09	.00	.010	.030	--
SEP.											
07...	456	190	15	--	2.1	.000	.12	.02	.000	.020	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAR.											
25...	--	--	--	--	--	--	--	--	--	--	--
APR.											
21...	745	270	0	1140	8.8	--	--	--	--	--	30
21...	--	--	--	1140	8.8	--	--	--	--	--	--
MAY											
25...	--	--	--	1100	8.6	--	--	--	--	--	--
25...	--	--	--	1100	8.6	--	--	--	--	--	--
JULY											
14...	--	--	--	1050	9.5	0	0	4	.2	0	--
SEP.											
07...	775	240	0	1155	9.3	0	1	4	.2	30	10

12445750 SUMMIT LAKE NEAR DISAUTEL, WASH.

LOCATION.--Lat 48°17'05", long 119°08'52", in NE¼SE¼ sec.10, T.32 N., R.29 E., Okanogan County, 6.6 miles southeast of Disautel.

DRAINAGE AREA.--0.49 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for lake outlet. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAY											
01...	1545	3.0	10.2	--	10	20	6.5	1.0	3.8	1.4	39
01...	1630	24	5.2	8.6	120	0	--	--	--	--	44
24...	1025	3.0	14.1	7.3	130	10	--	--	--	--	39
24...	1035	24	6.3	8.2	440	90	--	--	--	--	47
JULY											
13...	1035	3.0	19.0	5.6	90	0	--	--	--	--	58
13...	1040	24	9.1	8.4	330	75	--	--	--	--	45
SEP.											
05...	1520	3.0	20.0	4.6	80	0	6.2	1.0	4.4	1.2	35
05...	1530	23	12.5	6.3	60	0	--	--	--	--	43

DATE	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
MAY											
01...	32	1.3	.9	.2	1.5	.000	.12	.01	.010	.030	61
01...	36	--	--	--	1.7	.000	.18	.02	.020	.050	--
24...	32	--	--	--	.45	.000	.07	.02	.000	.000	--
24...	39	--	--	--	.70	.010	.16	.02	.000	.030	--
JULY											
13...	48	--	--	--	.93	--	.07	.03	.000	.010	--
13...	37	--	--	--	.94	--	.31	.03	.000	.030	--
SEP.											
05...	29	1.8	2.2	--	.59	.000	.17	.03	.000	.010	--
05...	35	--	--	--	.61	.000	.09	.02	.000	.020	--

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
MAY											
01...	--	20	0	64	6.1	--	--	--	--	--	3
01...	--	--	--	84	6.2	--	--	--	--	--	--
24...	--	--	--	64	7.7	--	--	--	--	--	--
24...	--	--	--	73	7.6	--	--	--	--	--	--
JULY											
13...	--	--	--	57	8.6	0	0	0	.2	10	--
13...	--	--	--	79	7.1	--	--	--	--	--	--
SEP.											
05...	39	20	0	61	8.2	0	1	4	11	0	17
05...	--	--	--	80	7.5	--	--	--	--	--	--

12445950 OMAK LAKE NEAR OMAK, WASH.

LOCATION.--Lat 48°14'37", long 119°20'26", in NE¼SE¼ sec.30, T.32 N., R.28 E., Okanogan County, 14.5 miles southeast of Omak.

DRAINAGE AREA.--104 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972.

REMARKS.--Descriptive locotion given above is for the southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPER-ATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)
MAR.											
25...	1600	--	5.0	--	--	--	--	--	--	--	--
25...	1730	--	6.2	--	--	--	--	--	--	--	--
APR.											
10...	1705	3.0	6.1	.2	0	0	3.4	110	1600	240	1720
10...	1725	250	2.0	1.0	20	0	--	--	--	--	1900
MAY											
25...	1025	3.0	11.0	.3	50	0	--	--	--	--	1520
25...	1035	295	2.0	1.1	40	0	--	--	--	--	1540
JULY											
14...	1100	3.0	18.5	.4	20	0	--	--	--	--	2190
14...	1115	290	2.2	1.1	20	0	--	--	--	--	1850
SEP.											
06...	1500	3.0	19.8	.4	40	0	3.5	110	1600	260	0
06...	1515	290	2.1	.8	20	0	--	--	--	--	1250

DATE	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
MAR.											
25...	--	--	--	--	.87	.010	.07	.13	--	.040	--
25...	--	--	--	--	.78	.010	.10	.04	--	.020	--
APR.											
10...	2460	1300	190	4.0	.76	.010	.12	.02	.010	.020	5720
10...	2550	--	--	--	.82	.000	.21	.02	.010	.030	--
MAY											
25...	1490	--	--	--	1.1	.010	.37	.10	.000	.010	--
25...	1530	--	--	--	.98	.010	.33	.04	.000	.020	--
JULY											
14...	1800	--	--	--	.70	--	.07	.02	.000	.010	--
14...	1520	--	--	--	.78	--	.08	.00	.010	.020	--
SEP.											
06...	1690	1400	190	--	.94	.000	.10	.02	.000	.010	--
06...	2530	--	--	--	4.5	.020	.15	.03	.000	.020	--

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	SUS-PENDED SOLIDS (MG/L)
MAR.											
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
APR.											
10...	4920	460	0	6600	9.6	--	--	--	--	--	30
10...	--	--	--	6600	9.7	--	--	--	--	--	--
MAY											
25...	--	--	--	6700	9.8	--	--	--	--	--	--
25...	--	--	--	6700	9.8	--	--	--	--	--	--
JULY											
14...	--	--	--	6800	9.6	0	1	3	.2	30	--
14...	--	--	--	6700	9.5	--	--	--	--	--	--
SEP.											
06...	4910	460	0	6600	9.5	0	1	5	15	20	17
06...	--	--	--	6750	9.5	--	--	--	--	--	--

12447200 OKANOGAN RIVER AT MALOTT, WASH.

LOCATION.--Lat 48°16'50", long 119°42'11", in SW¼ sec.9, T.32 N., R.25 E., Okanogan County, at highway bridge in Malott, 75 ft downstream from gaging station, 0.1 mile upstream from Loup Loup Creek, and at mile 17.0.

DRAINAGE AREA.--8,100 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1962, October 1962 to September 1970 (partial-record station), October 1971 to September 1972 (discontinued). Prior to November 1963 published as "near Brewster."
Water temperature: November 1969 to June 1971, at site 75 ft upstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES. WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
12...	1245	1320	31	8.6	9.2	1.6	128	105
19...	1200	1230	32	8.9	10	2.0	134	110
NOV.								
09...	1145	882	34	9.4	8.2	2.6	141	116
16...	1200	981	34	9.4	8.7	1.9	138	113
DEC.								
14...	1315	1100	36	11	11	2.2	147	121
MAR.								
14...	1130	2590	33	8.4	9.2	2.2	136	112
28...	1055	3980	30	7.1	7.6	1.7	115	94
APR.								
11...	1150	5050	30	7.9	7.6	1.6	118	97
25...	1225	3840	31	8.4	7.1	2.7	127	104
MAY								
09...	1220	8620	23	5.8	5.5	1.4	96	79
23...	1130	24800	16	3.6	3.9	1.3	64	52
JUNE								
13...	1215	42400	13	2.4	2.2	1.2	55	45
27...	1150	21500	14	2.9	3.7	1.5	59	48
JULY								
11...	1220	12000	17	3.4	4.0	1.3	75	62
25...	1230	7110	22	4.8	5.5	1.8	82	67
AUG.								
22...	1230	3440	28	7.2	7.7	2.1	116	95
SEP.								
12...	1220	2070	35	8.8	9.5	2.5	137	112
26...	1210	1490	32	9.1	7.9	2.0	136	112

12447200 OKANOGAN RIVER AT MALOTT, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
12...	35	1.5	.12	.010	.10	.01	.010	.020	110
19...	38	1.4	.11	.000	.06	.05	.010	.040	120
NOV.									
09...	31	1.6	.08	.000	.01	.11	.010	.030	120
16...	32	1.8	.14	.000	.08	.18	.020	.030	120
DEC.									
14...	37	2.3	.49	.010	.07	.13	.000	.030	140
MAR.									
14...	29	1.2	.56	.010	.04	.13	.010	.050	120
28...	23	1.4	.28	.010	.04	.10	.010	.040	100
APR.									
11...	26	1.8	.22	.010	.02	.02	.000	.040	110
25...	27	1.4	.34	.010	.04	.01	.000	.040	110
MAY									
09...	14	1.9	.39	.010	.05	.08	.000	.070	81
23...	9.7	.3	.42	.060	.33	.02	.000	.16	55
JUNE									
13...	7.0	1.1	.44	.010	.22	.04	.000	.19	42
27...	9.5	1.4	.45	.010	.12	.06	.000	.090	47
JULY									
11...	11	1.0	.51	.000	.13	.09	.010	.050	56
25...	15	2.0	.42	.000	.07	.21	.000	.020	75
AUG.									
22...	26	1.9	.78	.010	.15	.04	.000	.020	99
SEP.									
12...	30	2.9	.68	.000	.12	.08	.000	.010	120
26...	32	1.5	.19	.010	.06	.09	.000	.010	120

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
OCT.								
12...	8	255	7.9	14.3	13	1	9.7	400
19...	7	255	8.0	8.7	6	3	10.7	400
NOV.								
09...	8	130	7.9	3.2	15	1	12.9	100
16...	10	280	8.0	6.3	9	1	12.2	50
DEC.								
14...	15	305	7.8	.2	10	9	12.8	400
MAR.								
14...	5	265	8.0	5.9	16	7	12.1	200
28...	10	231	8.0	6.9	28	5	12.1	120
APR.								
11...	11	235	8.2	7.5	25	7	12.8	400
25...	8	258	8.0	11.0	20	6	10.6	500
MAY								
09...	3	185	7.7	11.6	50	20	11.3	1100
23...	2	138	7.5	9.8	91	52	11.1	--
JUNE								
13...	0	107	7.5	13.6	125	62	10.2	<1600
27...	0	120	7.5	13.4	44	27	10.3	2000
JULY								
11...	0	149	7.8	14.5	34	19	9.7	4000
25...	7	181	7.9	19.2	23	6	8.7	1400
AUG.								
22...	4	250	7.6	22.3	17	2	8.2	900
SEP.								
12...	11	299	8.1	17.5	14	3	9.0	--
26...	6	283	8.3	12.2	10	2	9.8	2000

12447306 SOAP LAKE NEAR MALOTT, WASH.

LOCATION.--Lat 48°13'42", long 119°38'42", in NE¼SE¼ sec.35, T.32 N., R.25 E., Okanogan County, 4.8 miles southeast of Malott.

DRAINAGE AREA.--16.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Descriptive location given above is for the southernmost tip of lake. Water samples taken elsewhere within lake body.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
APR.											
21...	1345	3.0	9.8	8.8	50	20	1.6	180	8400	800	2380
21...	1355	50	9.2	14	50	20	--	--	--	--	7630
MAY											
26...	0920	3.0	16.2	7.5	40	0	--	--	--	--	2530
26...	0930	50	9.4	17	340	80	--	--	--	--	7070
JULY											
15...	1015	3.0	20.2	7.8	60	10	--	--	--	--	3310
15...	1020	50	9.0	1.1	590	100	--	--	--	--	10200
SEP.											
07...	1000	3.0	19.8	11	30	0	1.5	200	9900	960	1180
07...	1015	50	9.2	2.6	620	90	--	--	--	--	7540

DATE	ALKALINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
APR.											
21...	4120	14000	1400	4.2	3.4	.030	.50	.03	.020	.030	26100
21...	11220	--	--	--	--	--	--	--	--	--	--
MAY											
26...	2590	--	--	--	--	.020	.89	.00	.020	.020	--
26...	10960	--	--	--	170	--	82	--	130	--	--
JULY											
15...	2720	--	--	--	--	--	--	--	--	--	--
15...	8370	--	--	--	--	--	--	--	--	--	--
SEP.											
07...	5060	16000	1700	--	3.5	.010	.33	.03	.020	.020	--
07...	10480	--	--	--	--	--	--	--	--	--	--

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	SUSPENDED SOLIDS (MG/L)
APR.											
21...	27300	740	0	29000	9.7	--	--	--	--	--	39
21...	--	--	--	--	9.0	--	--	--	--	--	--
MAY											
26...	--	--	--	29000	9.7	--	--	--	--	--	--
26...	--	--	--	53000	9.0	--	--	--	--	--	--
JULY											
15...	--	--	--	30500	9.5	0	1	6	.2	50	--
15...	--	--	--	62000	8.5	--	--	--	--	--	--
SEP.											
07...	31800	830	0	32000	9.5	0	4	7	5.5	20	13
07...	--	--	--	66000	9.8	--	--	--	--	--	--

12447390 ANDREWS CREEK NEAR MAZAMA, WASH.
(Hydrologic bench-mark station)

LOCATION.--Lat 48°49'28", long 120°08'50", in NE¼ sec.1, T.38 N., R.21 E., Okanogan County, 50 ft upstream from Blizzard Creek, 3.5 miles upstream from mouth, and 20 miles northeast of Mazama.

DRAINAGE AREA.--22.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1971 to September 1972.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
DEC.										
02...	1200	4.2	11	5.8	.8	2.3	.4	32	26	.8
FEB.										
09...	1136	3.1	12	7.0	1.0	2.6	.5	36	30	2.2
APR.										
05...	1130	6.3	11	7.3	.9	2.3	.8	38	31	2.8
JUNE										
07...	1000	445	7.1	2.3	.3	1.5	.4	11	9	3.4
JULY										
11...	1140	106	8.1	3.3	.5	1.3	.3	17	14	4.4
SEP.										
14...	1105	7.3	11	6.0	1.0	2.6	.7	35	28	4.1

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
DEC.										
02...	1.0	.0	.04	.080	59	38	18	0	57	8.2
FEB.										
09...	.9	.0	.11	.10	47	44	22	0	60	--
APR.										
05...	.2	.0	.04	.040	64	44	22	0	51	7.4
JUNE										
07...	2.2	.1	.02	.010	32	23	7	0	--	8.2
JULY										
11...	.0	.2	.01	.010	23	27	10	0	31	7.7
SEP.										
14...	.1	.0	.00	.020	44	43	19	0	59	7.5

DATE	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
DEC.										
02...	.2	0	12.0	.0	1	0	1	2	1.0	0
FEB.										
09...	.7	0	12.6	.6	--	--	--	--	--	--
APR.										
05...	.8	0	12.0	.0	4	--	--	--	--	--
JUNE										
07...	2.8	20	10.9	.3	--	--	--	--	--	--
JULY										
11...	5.4	10	10.8	.1	6	--	--	--	--	--
SEP.										
14...	5.8	0	10.5	.0	6	--	--	--	--	--

12447390 ANDREWS CREEK NEAR MAZAMA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	TEMPER-ATURE (DEG C)	ALDRIN (UG/L)	ALDRIN IN BOTTOM DE-POSITS (UG/KG)	CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM DE-POSITS (UG/KG)	DDD (UG/L)	DDD IN BOTTOM DE-POSITS (UG/KG)	DDE (UG/L)	DDE IN BOTTOM DE-POSITS (UG/KG)	DDT (UG/L)
DEC. 02...	1200	.2	.00	<.2	.0	<1.0	.00	<.2	.01	<.2	.00

DATE	DDT IN BOTTOM DE-POSITS (UG/KG)	DI-AZINON (UG/L)	DI-ELDRIN (UG/L)	DI-ELDRIN IN BOTTOM DE-POSITS (UG/KG)	ENDRIN (UG/L)	ENDRIN IN BOTTOM DE-POSITS (UG/KG)	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM DE-POSITS (UG/KG)	HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR EPOXIDE IN BOT-TOM DE-POSITS (UG/KG)	LINDANE (UG/L)
DEC. 02...	<.2	.00	.00	<.2	.00	<.2	.00	<.2	.00	<.2	.00

DATE	LINDANE IN BOTTOM DE-POSITS (UG/KG)	MALA-THION (UG/L)	MALA-THION IN BOTTOM DE-POSITS (UG/KG)	METHYL PARA-THION (UG/L)	METHYL PARA-THION IN BOT-TOM DE-POSITS (UG/KG)	PARA-THION (UG/L)	PARA-THION IN BOTTOM DE-POSITS (UG/KG)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
DEC. 02...	E.2	.00	<.2	.00	<.2	.00	<.2	.00	.00	.00

12449950 METHOW RIVER NEAR PATEROS, WASH.

LOCATION.--Lat 48°04'36", long 119°58'03", in NW¼NW¼ sec.28, T.30 N., R.23 E., Okanogan County, at bridge on State Highway 16, 1.0 mile downstream from gaging station, 2.4 miles downstream from Black Canyon Creek, 3.5 miles west of Pateros, and at mile 5.7.

DRAINAGE AREA.--1,777 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1962, October 1962 to September 1970 (partial-record station), October 1971 to September 1972 (discontinued).
Water temperatures: October 1968 to October 1970, at site 1.0 mile upstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
12...	1130	480	27	4.8	4.1	1.3	112	92	9.0	1.5	.10
19...	1010	492	28	4.7	4.1	.6	108	89	9.5	1.9	.10
NOV.											
09...	1045	438	26	4.6	4.0	1.0	104	85	9.0	.5	.07
16...	1115	444	25	4.4	4.1	.9	102	84	--	1.0	.20
DEC.											
14...	1140	400	26	4.6	4.4	.6	105	86	9.8	.2	.21
JAN.											
11...	1330	366	25	4.2	4.0	1.2	102	84	9.4	.2	.10
FEB.											
22...	1100	360	28	4.9	4.6	1.0	107	88	9.4	1.4	.03
MAR.											
14...	1030	607	26	4.7	4.4	1.0	106	87	--	.4	.31
28...	1005	1790	26	4.9	3.9	1.1	103	84	9.1	.3	.18
APR.											
11...	1050	2580	23	4.8	4.5	.9	100	82	9.0	.0	.08
25...	1100	2080	25	4.8	3.7	1.7	102	84	8.1	.4	.15
MAY											
09...	1150	6030	17	3.2	2.5	.8	70	57	5.1	.3	.32
23...	1030	13400	11	1.9	2.1	.6	40	33	3.4	.2	.41
JUNE											
13...	1045	12800	11	2.3	1.2	.8	38	31	7.8	.6	.86
27...	1030	7130	12	1.8	2.3	.9	45	37	4.0	.7	.16
JULY											
11...	1120	4590	12	1.8	2.0	.5	51	42	4.6	1.0	.71
25...	1100	3140	14	2.2	2.0	.7	55	45	4.9	1.0	.42
AUG.											
08...	1340	1950	17	2.6	2.9	1.1	64	52	8.1	1.3	.41
22...	1120	1420	20	3.3	3.3	.7	81	66	7.4	.2	.65
SEP.											
12...	1100	664	28	4.5	4.3	.8	101	83	9.7	1.8	.41
26...	1100	726	29	4.9	3.9	.9	104	85	11	.2	.31

12449950 METHOW RIVER NEAR PATEROS, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
12...	.000	.02	.25	.000	.010	87	0	130	7.4	11.6
19...	.000	.07	.25	.010	.010	89	1	180	7.8	7.3
NOV.										
09...	.000	.00	.31	.000	.010	84	0	160	7.9	3.9
16...	.000	.08	.52	.010	.010	80	0	180	7.7	4.9
DEC.										
14...	.000	.06	.40	.000	.000	84	0	185	8.0	.2
JAN.										
11...	.010	.03	.43	.010	.010	79	0	171	7.9	1.0
FEB.										
22...	.000	.01	.30	.000	.010	90	2	185	8.0	3.1
MAR.										
14...	.010	.07	.22	.000	.020	84	0	180	8.0	6.5
28...	.010	.01	.22	.000	.010	85	1	182	8.1	6.7
APR.										
11...	.010	.00	.14	.000	.010	77	0	163	8.2	6.7
25...	.010	.02	.11	.000	.040	82	0	177	8.0	10.3
MAY										
09...	.000	.04	.16	.000	.040	55	0	119	7.3	10.0
23...	.020	.15	.08	.000	.070	35	2	79	7.4	7.6
JUNE										
13...	.000	.33	.10	.000	.20	37	6	86	7.2	8.4
27...	.000	.04	.08	.000	.040	37	0	87	7.3	10.3
JULY										
11...	.000	.17	.14	.000	.020	37	0	96	7.7	11.3
25...	.000	.09	.22	.000	.010	44	0	112	7.7	14.2
AUG.										
08...	.010	.08	.13	.000	.010	53	1	130	7.6	18.8
22...	.010	.15	.16	.000	.010	63	0	158	7.5	17.9
SEP.										
12...	.000	.07	.30	.000	.000	88	6	189	8.1	13.5
26...	.010	.07	.30	.000	.010	93	7	175	8.1	9.4

12449950 METHOW RIVER NEAR PATEROS, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
12...	4	1	11.0	200	6	--	0	3	.2	10
19...	8	6	11.4	400	4	--	1	1	.2	0
NOV.										
09...	7	1	12.8	100	0	--	0	0	.1	10
16...	4	1	12.7	100	6	--	0	0	.0	30
DEC.										
14...	28	1	13.9	20	0	--	5	2	.3	20
JAN.										
11...	8	1	13.8	30	--	0	1	4	.0	20
FEB.										
22...	21	2	13.2	30	--	0	0	2	.8	20
MAR.										
14...	10	2	12.6	80	--	0	0	1	.6	10
28...	17	2	12.2	220	--	0	0	4	.0	7
APR.										
11...	21	3	12.2	220	--	0	1	2	.5	7
25...	15	2	11.7	370	--	0	1	1	.2	20
MAY										
09...	35	17	11.5	400	--	0	2	0	.0	20
23...	44	28	11.8	--	--	0	2	0	.5	0
JUNE										
13...	74	64	11.3	1000	--	0	6	2	.7	10
27...	32	10	10.0	900	--	0	5	50	1.8	50
JULY										
11...	14	6	10.6	600	--	0	2	2	.1	0
25...	12	2	10.1	400	--	0	1	3	.2	20
AUG.										
08...	11	1	9.0	--	--	0	8	57	.6	20
22...	7	1	9.6	400	--	0	0	1	.5	10
SEP.										
12...	8	1	10.2	--	--	0	1	2	.2	60
26...	7	2	11.0	170	--	0	4	0	.3	20

12452000 LAKE CHELAN NEAR CHELAN, WASH.

LOCATION.--Lat 47°57'38", long 120°11'07", in NE¼NW¼ sec.3, T.28 N., R.21 E., Chelan County, sampling site at buoy about 50 feet from shore, 12.5 miles upstream from lake gaging station, and at mile 18.6.

DRAINAGE AREA.--924 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: June 1971 to August 1972 (discontinued).

REMARKS.--Location paragraph above is for "Site No. 2." "Site No. 1" is about 1,000 feet upstream from "Site No. 2." Temperature and dissolved oxygen data presented are field measurements made using temperature and oxygen sensors.

CHEMICAL ANALYSES, OCTOBER 1971 TO AUGUST 1972

DATE	TIME	DEPTH (FT)	TEMPERATURE (DEG C)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT.												
20...	1215	13	13.0	5.1	7.1	--	1.9	.6	24	20	4.8	.7
20...	1225	131	11.0	5.1	6.6	--	1.2	.4	24	20	3.8	.9
JAN.												
18...	1245	--	5.5	5.3	7.3	1.0	1.8	.6	24	--	3.8	.8
AUG.												
01...	1325	13	16.0	5.1	7.2	.8	1.3	.6	28	23	4.2	.1
01...	1330	131	11.0	4.8	7.8	.9	1.8	.6	24	20	4.4	.1

DATE	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED COPPER (CU) (UG/L)
OCT.											
20...	.1	--	.02	.010	--	--	--	--	46	--	--
20...	.1	--	.05	.020	--	--	--	--	46	--	--
JAN.											
18...	.0	--	--	--	30	--	22	--	61	7.8	--
AUG.											
01...	.0	.020	.27	.010	--	33	21	0	47	--	70
01...	.1	.020	.54	.000	--	32	23	4	48	--	30

INSTANTANEOUS SUSPENDED SEDIMENT CONCENTRATION

Date	Depth (Meters)	Sediment Concentration (Mg/l)	Date	Depth (Meters)	Sediment Concentration (Mg/l)
OCT.					
20, 1971.....	4	0	JUNE		
20.....	40	1	20, 1972.....	10	2
JAN.			20.....	46	3
18, 1972.....	30	0	AUG.		
			01.....	4	3
				40	2

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO. 2"--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, OCTOBER 1971 TO AUGUST 1972

Sample Depth (Meters Below Surface)	Oct. 13 (1200) Temp. (°C)	D.O. (mg/l)	Oct. 20 (1150) Temp. (°C)	D.O. (mg/l)	Oct. 27 (1235) Temp. (°C)	D.O. (mg/l)	Nov. 23 (1150) Temp. (°C)	D.O. (mg/l)	Dec. 14 (1230) Temp. (°C)	D.O. (mg/l)	Jan. 18 (1230) Temp. (°C)	D.O. (mg/l)
S	14.0	10.1	13.0	10.0	12.0	10.2	9.5	10.7	7.0	11.2	5.5	12.0
1	14.0	10.0	13.0	9.9	12.0	10.1	9.5	10.8	7.0	11.1	5.5	11.9
2	14.5	9.9	13.0	10.0	12.0	10.1	9.5	10.7	7.0	11.0	5.5	11.9
3	14.5	9.9	---	---	---	---	---	---	---	---	---	---
4	14.5	9.9	13.0	10.0	12.5	10.2	9.5	10.7	7.0	11.1	5.5	11.8
6	14.5	9.9	13.0	10.1	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.7
8	14.5	9.9	13.0	9.9	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.6
10	14.5	10.0	13.0	9.7	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.6
12	14.5	9.9	13.0	9.8	12.5	10.1	9.5	10.6	7.0	11.2	5.5	11.5
14	14.5	10.0	13.0	9.9	12.5	10.1	9.5	10.6	7.0	11.2	5.5	11.6
16	14.5	10.0	13.0	9.8	12.5	10.1	9.5	10.5	7.0	11.1	5.5	11.5
18	14.5	10.0	13.0	9.8	12.5	10.1	9.5	10.5	7.0	11.1	5.5	11.5
20	14.5	10.0	13.0	9.8	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.5
22	14.5	10.0	13.0	9.8	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.5
24	14.5	9.9	13.0	9.8	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.5
26	14.5	9.9	13.0	9.9	12.5	10.1	9.5	10.6	7.0	11.1	5.5	11.6
28	14.5	10.0	13.0	9.9	12.5	10.1	9.5	10.6	7.0	11.2	5.5	11.5
30	14.5	10.0	13.0	9.7	12.5	10.0	9.5	10.6	7.0	11.2	5.5	11.6
32	14.5	10.0	13.0	9.6	12.5	10.0	9.5	10.6	7.0	11.2	5.5	11.5
33	14.5	---	13.0	9.5	---	---	---	---	---	---	---	---
34	14.5	10.0	13.0	9.6	12.5	10.0	9.5	10.6	7.0	11.2	5.5	11.6
36	14.0	9.9	12.5	9.6	12.5	10.0	9.5	10.7	7.0	11.2	5.5	11.5
37	---	---	12.0	9.7	---	---	---	---	---	---	---	---
38	14.0	10.0	11.5	9.8	12.5	10.0	9.5	10.7	7.0	11.2	5.5	11.5
39	---	---	11.0	9.8	---	---	---	---	---	---	---	---
40	14.0	10.0	11.0	9.7	12.5	10.0	9.5	10.7	7.0	11.2	5.5	11.5
42	13.5	9.9	11.0	10.0	12.5	10.1	9.5	10.7	7.0	11.2	5.5	11.6
43	12.0	10.1	---	---	---	---	---	---	---	---	---	---
44	11.5	10.2	10.5	9.7	12.5	10.0	9.5	10.7	7.0	11.1	5.5	11.5
45	11.0	10.2	---	---	---	---	---	---	---	---	---	---
46	10.5	10.3	10.0	9.9	12.5	10.0	9.5	10.7	7.0	11.1	5.5	11.5
47	10.5	10.3	----	---	---	---	---	---	---	---	---	---
48	10.5	10.3	9.5	9.9	12.5	10.0	9.5	10.6	7.0	11.1	5.5	11.6
50	9.5	10.3	9.0	10.0	12.5	10.0	9.0	10.6	7.0	11.1	5.5	11.5
52	9.0	10.3	8.5	10.1	12.5*	10.1*	9.0	10.6	7.0	11.2	5.5	11.5
53	---	---	8.5*	10.2*	---	---	---	---	---	---	---	---
54	9.0	10.4	---	---	---	---	8.5	10.7	7.0	11.2	5.5	11.5
55	9.0*	10.3	---	---	---	---	---	---	---	---	---	---
56	---	---	---	---	---	---	8.0	10.7	7.0	11.2	5.5	11.5
58	---	---	---	---	---	---	8.0	10.6	7.0	11.2	5.5	11.5

*At lake bottom.

SECCHI DISC TRANSPARENCY (METERS)	9.5	9.5	10.0	10.0	16.0	---

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO. 2".--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, OCTOBER 1971 TO AUGUST 1972

Sample Depth (Meters Below Surface)	Feb. 17 (1515) Temp. (°C)	D.O. (mg/l)	Mar. 16 (1325) Temp. (°C)	D.O. (mg/l)	Apr. 18 (1300) Temp. (°C)	D.O. (mg/l)	May 16 (1400) Temp. (°C)	D.O. (mg/l)	May 23 (1145) Temp. (°C)	D.O. (mg/l)	May 31 (1140) Temp. (°C)	D.O. (mg/l)
S	5.0	---	6.0	11.7	6.0	12.0	9.0	11.8	9.0	11.5	9.5	11.2
1	---	---	5.5	11.8	---	---	---	---	---	---	---	---
2	5.0	12.2	5.5	11.8	6.0	12.0	9.0	11.9	9.0	11.7	9.5	11.2
4	5.0	---	5.5	11.7	6.0	12.1	8.5	11.9	9.0	11.6	9.5	11.2
6	5.0	---	5.5	11.7	6.0	12.1	8.5	11.9	9.0	11.7	9.5	11.1
8	5.0	---	5.0	11.7	6.0	12.1	8.5	11.7	9.0	11.7	9.0	11.2
10	5.0	---	5.0	11.8	6.0	12.1	8.5	11.9	8.5	11.7	9.0	11.2
11	---	---	---	---	---	---	---	---	---	---	---	---
12	5.0	---	5.0	11.7	6.0	12.1	8.0	11.8	8.5	11.7	9.0	11.2
14	5.0	---	5.0	11.7	6.0	12.1	8.0	11.9	8.5	11.7	9.0	11.2
16	5.0	12.2	5.0	11.7	6.0	12.0	8.0	12.1	8.5	11.6	9.0	11.2
18	5.0	---	5.0	11.7	6.0	12.0	8.0	12.0	8.5	11.6	9.0	11.2
20	5.0	---	5.0	11.7	5.5	12.0	8.0	12.0	8.5	11.6	9.0	11.1
22	5.0	---	5.0	11.7	5.5	12.0	8.0	12.0	8.5	11.6	9.0	11.2
24	5.0	---	5.0	11.7	5.5	12.0	8.0	12.0	8.5	11.6	9.0	11.1
26	5.0	---	5.0	11.7	5.5	12.0	8.0	12.0	8.5	11.6	9.0	11.1
28	5.0	---	5.0	11.8	5.5	12.0	8.0	12.0	8.5	11.6	9.0	11.1
29	---	---	---	---	---	---	---	---	---	---	---	---
30	5.0	12.2	5.0	11.8	5.5	12.0	8.0	12.0	8.5	11.6	8.5	11.1
32	5.0	---	5.0	11.8	5.5	12.0	8.0	11.8	8.5	11.6	8.5	11.1
34	5.0	---	5.0	11.8	5.5	12.0	7.5	11.8	8.5	11.6	8.5	11.1
36	5.0	---	5.0	11.8	5.5	12.0	7.0	11.9	8.5	11.6	8.0	11.1
38	5.0	---	5.0	11.8	5.5	12.0	7.0	11.9	8.5	11.6	8.0	11.2
40	5.0	---	5.0	11.8	5.5	11.9	7.0	11.9	8.0	11.6	8.0	11.2
42	5.0	---	5.0	11.7	5.5	11.9	7.0	11.9	8.0	11.6	8.0	11.2
44	5.0	---	5.0	11.7	5.5	11.8	7.0	11.8	8.0	11.6	7.5	11.3
46	5.0	---	5.0	11.7	5.5	11.8	7.0	11.9	8.0	11.6	7.0	11.2
48	5.0	---	5.0	11.7	5.5	11.9	6.5	11.8	8.0	11.6	7.0	11.2
50	5.0	12.2	5.0	11.6	5.5	11.9	6.5	11.9	8.0	11.6	7.0	11.3
52	5.0	---	5.0	11.6	5.5	11.8	6.5*	12.0*	8.0	11.6	7.0	11.3
54	5.0	---	5.0	11.7	5.5*	11.8*	---	---	8.0*	11.6*	7.0	11.3
56	5.0	---	5.0	11.0	---	---	---	---	---	---	7.0	11.3
58	5.0	---	5.0	6.4	---	---	---	---	---	---	---	---
60	5.0	---	---	---	---	---	---	---	---	---		

*At lake bottom.

SECCHI DISC TRANSPARENCY (METERS)	24	20	14.5	9.5	8.5	9.0

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO.2".--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, OCTOBER 1971 TO AUGUST 1972

Sample Depth (Meters Below Surface)	June 6 (1535) Temp. (°C)	June 6 (1535) D.O. (mg/l)	June 20 (1315) Temp. (°C)	June 20 (1315) D.O. (mg/l)	July 6 (1200) Temp. (°C)	July 6 (1200) D.O. (mg/l)	July 18 (1130) Temp. (°C)	July 18 (1130) D.O. (mg/l)	Aug. 1 (1300) Temp. (°C)	Aug. 1 (1300) D.O. (mg/l)	Aug. 15 (1240) Temp. (°C)	Aug. 15 (1240) D.O. (mg/l)
S	12.0	11.1	12.0	10.6	15.0	10.2	16.0	9.8	16.0	10.4	17.0	9.8
1	---	---	---	---	---	---	---	---	---	---	---	---
2	11.5	11.1	12.0	10.7	14.0	10.6	16.5	9.9	16.0	10.4	16.5	9.8
4	11.0	11.2	12.0	10.7	14.0	10.7	16.0	9.9	16.0	10.4	16.5	9.8
6	10.5	11.2	12.0	10.8	14.0	10.8	15.0	10.0	16.0	10.4	16.0	9.8
8	10.5	11.2	11.0	10.8	14.0	11.0	14.5	10.3	15.5	10.4	16.0	10.0
10	10.5	11.2	11.0	11.0	13.0	11.2	13.5	10.3	15.5	10.6	16.0	10.0
11	---	---	---	---	12.5	11.2	---	---	---	---	---	---
12	10.5	11.2	11.0	11.0	12.0	11.3	12.5	10.4	15.5	10.6	16.0	10.1
14	9.5	11.2	11.0	11.0	11.5	11.4	12.0	10.5	15.5	10.6	16.0	10.1
16	9.0	11.2	11.0	11.0	11.0	11.4	12.0	10.5	15.0	10.6	16.0	10.2
18	9.0	11.4	10.5	11.0	10.5	11.4	12.0	10.6	15.0	10.7	15.5	10.2
20	9.0	11.5	10.0	11.0	10.0	11.3	12.0	10.6	15.0	10.8	15.5	10.4
22	8.5	11.4	9.5	11.0	10.0	11.2	11.5	10.6	14.5	10.8	15.0	10.4
24	8.5	11.2	9.5	11.0	10.0	11.2	11.5	10.7	14.5	10.8	15.0	10.4
26	8.0	11.4	9.0	11.1	10.0	11.2	11.0	10.7	14.5	10.9	15.0	10.4
28	8.0	11.4	9.0	11.2	9.5	11.2	10.5	10.8	14.0	10.9	15.0	10.6
29	---	---	---	---	---	---	---	---	---	---	14.0	10.8
30	8.0	11.4	9.0	11.2	9.5	11.2	10.0	10.8	14.0	11.0	12.5	10.8
32	8.0	11.3	9.0	11.2	9.0	11.2	10.0	10.8	13.0	11.2	11.5	11.0
34	8.0	11.4	8.5	11.0	9.0	11.2	9.5	10.8	12.0	11.5	10.0	11.0
36	8.0	11.4	8.5	11.2	9.0	11.2	9.0	10.9	12.0	11.5	9.5	11.0
38	8.0	11.4	8.5	11.2	9.0	11.2	8.0	10.8	11.5	11.6	9.0	11.0
40	8.0	11.5	8.0	11.2	8.5	11.2	8.0	10.9	11.0	11.6	8.5	11.1
42	7.5	11.5	8.0	11.2	8.0	11.2	7.5	10.9	11.0	11.7	8.0	11.1
44	7.5	11.5	8.0	11.2	8.0	11.2	7.0	11.0	10.0	11.7	8.0	11.2
46	7.0	11.5	8.0	11.2	8.0	11.4	7.0	10.9	9.5	11.8	8.0	11.2
48	7.0	11.5	8.0	11.2	7.5	11.4	7.0	11.0	9.0	11.8	7.5	11.2
50	7.0	11.5	8.0	11.2	7.5	11.4	7.0	11.0	9.0	11.7	7.0	11.2
52	7.0	11.5	7.5	11.2	7.5	11.4	7.0	11.0	8.5	11.7	7.0	11.2
54	7.0	11.5	7.0	11.2	7.5	11.3	7.0	11.0	8.0	11.7	6.5	11.2
56	6.5	11.4	7.0	11.2	7.5	11.4	7.0	11.0	8.0	11.7	6.5	11.2
58	6.5	11.4	7.0	11.2	7.5	11.4	7.0	11.0	7.5	11.8	6.5*	11.2*
60	---	---	---	---	---	---	---	---	---	---	---	---
SECCHI DISC TRANSPARENCY (METERS)	9.5		7.5		9.5		8.5		9.0		8.5	

* At lake bottom.

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO. 1"--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, OCTOBER 1971 TO APRIL 1972

Sample Depth (Meters Below Surface)	Oct. 13 (1115) Temp. (°C)	D.O. (mg/l)	Oct. 20 (1110) Temp. (°C)	D.O. (mg/l)	Oct. 27 (1145) Temp. (°C)	D.O. (mg/l)	Nov. 23 (1125) Temp. (°C)	D.O. (mg/l)	Dec. 14 (1145) Temp. (°C)	D.O. (mg/l)
Surface	14.0	10.0	13.0	10.0	12.0	10.3	9.5	10.8	7.0	11.0
1	14.0	9.9	13.0	10.0	12.0	10.2	10.0	10.6	7.0	11.0
2	14.0	9.9	13.0	10.0	12.0	10.3	10.0	10.6	7.0	11.0
3	14.0	9.9	---	---	---	---	---	---	---	---
4	14.5	9.9	13.0	9.9	12.5	10.3	10.0	10.6	7.0	11.1
6	14.5	9.8	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.1
8	14.5	9.9	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
10	14.5	9.9	13.0	9.8	12.5	10.2	10.0	10.6	7.0	11.2
12	14.0	9.9	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
14	14.0	9.8	13.0	9.6	12.5	10.3	10.0	10.6	7.0	11.2
16	14.0	9.9	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
18	14.0	9.9	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
20	14.0	9.9	13.0	9.8	12.5	10.2	10.0	10.6	7.0	11.2
22	14.0	9.9	13.0	9.7	12.5	10.2	10.0	10.6	7.0	11.2
24	14.0	9.9	13.0	9.9	12.5	10.3	10.0	10.6	7.0	11.2
26	14.0	9.8	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
28	14.0	9.8	13.0	9.9	12.5	10.2	10.0	10.6	7.0	11.2
30	14.0	9.8	13.0	9.7	12.5	10.2	10.0	10.6	7.0	11.2
32	14.0	9.8	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
34	14.0	9.8	13.0	9.8	12.5	10.3	10.0	10.6	7.0	11.2
35	---	---	12.0	9.9	---	---	---	---	---	---
36	13.5	9.8	12.0	9.9	12.5	10.3	10.0	10.6	7.0	11.2
37	---	---	12.0	9.9	---	---	---	---	---	---
38	13.5	9.9	11.5	9.9	12.5	10.3	10.0	10.6	7.0*	11.1*
39	13.0	9.9	---	---	---	---	---	---	---	---
40	13.0	9.9	11.5	10.0	12.0	10.3	10.0*	10.6*	---	---
42	13.0	9.9	11.5	10.0	12.0	10.3	---	---	---	---
43	13.0	10.0	---	---	---	---	---	---	---	---
44	12.0	10.0	11.0*	10.1*	12.0	10.3	---	---	---	---
45	11.0	10.1	---	---	---	---	---	---	---	---
46	11.0	10.1	---	---	12.0	10.3	---	---	---	---
47	10.5*	10.1*	---	---	---	---	---	---	---	---
48	---	---	---	---	12.0*	10.3*	---	---	---	---

* At lake bottom.

SECCHI DISC TRANSPARENCY (METERS)	8.0	9.5	9.5	9.5	12.0

12452000 LAKE CHELAN NEAR CHELAN, WASH.--Continued

"SITE NO. 1"--INSTANTANEOUS TEMPERATURE AND DISSOLVED OXYGEN (D.O.) DATA, OCTOBER 1971 TO APRIL 1972

Sample Depth (Meters Below Surface)	Jan. 18 (1130) Temp. (°C)	D.O. (mg/l)	Feb. 17 (1500) Temp. (°C)	D.O. (mg/l)	Mar. 16 (1235) Temp. (°C)	D.O. (mg/l	Apr. 18 (1200) Temp. (°C)	D.O. (mg/l)
S	5.5	11.8	5.0	---	5.5	11.8	6.0	12.1
1	5.5	11.7	5.0	12.2	5.5	11.8	6.0	12.1
2	5.5	11.7	5.0	---	5.5	11.8	6.0	12.1
4	5.5	11.6	5.0	---	5.5	11.8	6.0	12.1
6	5.5	11.6	5.0	---	5.5	11.8	6.0	12.1
8	5.5	11.7	5.0	---	5.0	11.8	6.0	12.1
10	5.5	11.6	5.0	---	5.0	11.7	6.0	12.1
12	5.5	11.5	5.0	12.1	5.0	11.8	6.0	12.1
14	5.5	11.7	5.0	---	5.0	11.8	5.5	12.0
16	5.5	11.6	5.0	---	5.0	11.8	5.5	12.1
18	5.5	11.6	5.0	---	5.0	11.8	5.5	12.0
20	5.5	11.6	5.0	---	5.0	11.8	5.5	12.0
22	5.5	11.7	5.0	---	5.0	11.8	5.5	12.0
24	5.5	11.6	5.0	12.3	5.0	11.7	5.5	12.0
26	5.5	11.6	5.0	---	5.0	11.7	5.5	11.9
28	5.5	11.6	5.0	---	5.0	11.6	5.5	11.9
30	5.5	11.5	5.0	---	5.0	11.6	5.5	11.9
32	5.5	11.7	5.0	---	5.0	11.7	5.5	11.8
34	5.5	11.6	5.0	---	5.0	11.6	5.5	11.8
36	5.5	11.6	5.0	12.2	5.0	11.7	5.5	11.8
38	5.5	11.6	5.0	---	5.0	11.7	5.5	11.8
40	5.5	11.5	5.0	---	5.0	11.7	5.5	11.7
42	5.5	11.6	5.0	---	5.0	11.7	5.5	11.8
44	5.5	11.5	5.0*	---	5.0	11.7	5.5	11.7
46	5.5	11.5	---	---	5.0*	11.7*	5.5	11.8
48	5.5	11.5	---	---	---	---	5.5*	11.7*
50	5.5	11.6	---	---	---	---	---	---
52	5.5*	11.5*	---	---	---	---	---	---
SECCHI DISC TRANSPARENCY (METERS)		15.5		---		21		12.5

*At lake bottom.

12452500 CHELAN RIVER AT CHELAN, WASH.

LOCATION.--Lat 47°49'54", long 120°00'37", in SE¼SE¼ sec.13, T.27 N., R.22 E., Chelan County, at gaging station in forebay at control dam at outlet to Lake Chelan, 0.4 mile south of Chelan, and at mile 4.5.

DRAINAGE AREA.--924 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1961 to September 1970, October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
12...	1030	2230	8.1	.9	1.1	.8	32	26	4.5	1.4	.12
19...	0925	2230	6.6	.6	1.3	.6	28	23	3.5	1.7	.10
NOV.											
09...	1000	1900	6.4	.7	1.2	.7	25	21	4.0	.4	.08
16...	1000	2200	6.1	.9	1.3	.7	23	19	2.8	1.0	.22
DEC.											
14...	1030	2260	6.0	.9	1.4	1.0	25	21	5.0	.7	.20
JAN.											
11...	1245	2250	6.4	.8	1.3	.9	25	21	5.1	.4	.17
25...	1000	2240	6.5	1.0	1.4	.7	24	20	4.7	1.1	.05
FEB.											
08...	0925	2220	6.4	.8	1.2	.5	25	21	3.2	.6	.06
22...	1000	2220	6.6	.8	1.3	1.0	26	21	4.3	1.6	.02
MAR.											
14...	0950	1530	6.7	.9	1.6	.8	28	23	--	.3	.19
28...	0915	1670	6.3	.7	1.2	.7	27	22	4.1	.1	.07
APR.											
11...	1000	2100	6.3	.9	1.5	.8	27	22	3.9	.7	.01
25...	1005	2200	6.6	.9	1.2	.8	25	21	6.2	.7	.11
MAY											
09...	0955	2200	6.4	.9	1.1	.7	27	22	4.0	.2	.04
23...	1000	8400	6.5	.8	1.5	.4	25	21	4.3	.4	.12
JUNE											
13...	0945	7500	7.0	.9	.8	.6	25	21	9.1	.4	.48
27...	0950	6500	7.3	.9	1.3	.6	30	25	5.3	1.0	.52
JULY											
11...	1015	5900	6.7	1.0	.9	.7	25	21	4.6	1.0	.22
25...	1000	2500	6.4	.9	1.1	.6	27	22	4.7	1.0	.10
AUG.											
08...	1245	5700	6.8	.8	1.8	.9	23	19	6.3	1.6	.83
22...	0950	2700	6.7	.8	1.3	.6	26	21	5.2	.3	.15
SEP.											
12...	1000	2100	6.6	.8	1.6	.6	24	20	3.7	1.2	.36
26...	1000	2100	6.3	.9	1.3	.7	27	22	6.0	.3	.26

12452500 CHELAN RIVER AT CHELAN, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
12...	.000	.02	.02	.000	.010	24	0	49	8.3	15.3
19...	.000	.02	.02	.010	.010	19	0	48	7.4	12.9
NOV.										
09...	.000	.01	.11	.000	.010	19	0	50	7.6	9.3
16...	.000	.08	.32	.010	.020	19	0	52	7.7	9.8
DEC.										
14...	.000	.04	.09	.000	.010	19	0	53	7.1	4.8
JAN.										
11...	.000	.04	.14	.040	.040	19	0	50	7.3	4.2
25...	.000	.02	.35	.000	.000	20	1	49	7.4	.2
FEB.										
08...	.000	.01	.07	.000	.000	19	0	51	--	2.8
22...	.000	.01	.15	.000	.000	20	0	54	7.6	3.3
MAR.										
14...	.000	.03	.15	.010	.020	20	0	55	7.3	6.2
28...	.010	.01	.13	.010	.010	19	0	48	7.5	6.7
APR.										
11...	.000	.00	.07	.000	.000	19	0	48	7.7	8.3
25...	.010	.01	.06	.000	.010	20	0	49	7.4	10.2
MAY										
09...	.000	.00	.09	.000	.010	19	0	51	7.1	12.2
23...	.000	.00	.07	.000	.000	20	0	54	7.4	13.5
JUNE										
13...	.010	.13	.07	.010	.010	21	1	68	7.2	14.0
27...	.000	.11	.10	.000	.010	22	0	61	7.3	15.3
JULY										
11...	.000	.04	.09	.000	.010	21	0	57	7.6	17.0
25...	.010	.04	.14	.000	.000	20	0	59	7.5	19.0
AUG.										
08...	.010	.13	.04	.000	.010	20	1	63	7.0	23.6
22...	.010	.06	.03	.000	.020	20	0	58	7.3	21.2
SEP.										
12...	.000	.06	.03	.000	.000	20	0	53	7.4	18.5
26...	.000	.06	.06	.000	.010	19	0	60	7.5	14.5

12452500 CHELAN RIVER AT CHELAN, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
12...	3	1	9.7	180	5	--	1	0	.2	0
19...	5	1	9.6	65	4	--	1	2	.1	0
NOV.										
09...	7	1	10.3	40	0	--	0	0	.1	20
16...	12	1	10.5	20	5	--	5	27	.0	110
DEC.										
14...	8	2	11.3	20	0	--	20	3	.3	10
JAN.										
11...	7	2	12.4	20	--	0	1	4	.0	20
25...	4	1	12.7	20	--	0	1	4	.2	8
FEB.										
08...	4	1	12.3	20	--	0	2	3	.3	0
22...	6	3	12.4	20	--	0	3	4	.7	20
MAR.										
14...	10	3	12.1	40	--	0	1	4	.7	10
28...	6	1	11.8	20	--	0	2	5	.1	10
APR.										
11...	3	1	11.5	100	--	0	1	0	.3	7
25...	4	2	11.2	>20	--	0	1	2	.3	20
MAY										
09...	3	2	10.8	<20	--	0	0	0	.0	8
23...	3	1	10.3	--	--	0	0	0	.3	0
JUNE										
13...	4	3	10.4	>20	--	0	0	2	.3	20
27...	18	1	10.6	28	--	0	10	2	.5	40
JULY										
11...	5	1	9.7	150	--	0	2	2	2.3	0
25...	2	1	9.5	400	--	0	1	1	1.1	20
AUG.										
08...	6	1	8.5	--	--	0	8	34	.4	20
22...	7	1	8.9	270	--	0	1	1	.4	30
SEP.										
12...	8	2	9.0	--	--	0	1	2	.6	0
26...	9	2	9.2	900	--	0	4	1	.2	0

12453000 ENTIAT RIVER NEAR ENTIAT, WASH.

LOCATION.--Lat 47°39'48", long 120°14'58", in NW¼SE¼ sec.18, T.25 N., R.21 E., Chelan County, at road bridge 1.2 miles west of Entiat High School, and at mile 1.4.

DRAINAGE AREA.--419 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1970, October 1971 to September 1972 (discontinued). Prior to October 1971, at site 1.7 miles upstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
12...	0930	129	12	2.7	2.8	1.4	53	43	6.3	1.4	.16
19...	0840	138	12	2.4	2.7	1.3	52	43	6.5	2.0	.08
NOV.											
09...	0905	133	11	2.3	2.7	1.5	49	40	7.0	.4	.10
16...	0850	129	11	2.3	2.9	1.6	50	41	4.8	1.1	.22
DEC.											
14...	0930	110	12	2.5	3.4	.9	52	43	6.3	.3	.30
JAN.											
11...	1200	115	12	2.4	3.0	1.8	54	44	6.1	.2	.21
25...	0855	115	14	2.8	3.2	1.3	58	48	6.7	.6	.07
FEB.											
08...	0830	--	13	2.7	3.2	1.1	55	45	5.6	1.2	.06
22...	0915	--	16	3.3	3.6	1.8	67	55	7.4	1.8	.06
MAR.											
14...	0910	--	16	3.2	3.9	1.9	68	56	8.8	.9	.61
28...	0825	--	14	3.2	3.5	1.6	63	52	6.0	.4	.10
APR.											
11...	0915	--	12	2.7	3.7	1.4	56	46	5.7	.6	.04
25...	0910	--	14	3.0	3.1	1.9	57	47	5.5	.9	.27
MAY											
09...	0845	--	7.5	1.8	2.4	1.3	40	33	4.0	.7	.35
23...	0900	--	6.7	1.3	1.9	.7	26	21	3.0	.9	.31
JUNE											
13...	0845	--	8.5	1.6	1.1	1.0	34	28	3.1	.8	.32
27...	0910	--	5.3	1.0	1.8	1.2	26	21	6.1	.8	.23
JULY											
11...	0915	--	5.2	.9	1.2	.7	24	20	3.1	1.0	.36
25...	0900	--	5.7	1.1	1.3	.9	25	21	3.1	1.0	.19
AUG.											
08...	0945	--	5.9	1.0	1.9	1.2	26	21	4.8	1.0	.44
22...	0900	--	9.0	2.1	2.4	1.4	38	31	4.5	.4	1.4
SEP.											
12...	0915	--	11	2.3	2.9	1.2	49	40	5.1	1.2	.42
26...	0900	--	11	2.4	2.6	1.2	--	--	--	.1	.37

12453000 ENTIAT RIVER NEAR ENTIAT, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
12...	.000	.08	.14	.000	.020	41	0	95	8.1	9.3
19...	.000	.05	.14	.010	.060	40	0	95	7.4	6.2
NOV.										
09...	.000	.01	.20	.010	.030	37	0	90	7.5	3.1
16...	.000	.06	.25	.010	.030	37	0	94	7.6	2.3
DEC.										
14...	.010	.09	.23	.000	.010	40	0	100	7.3	.3
JAN.										
11...	.010	.04	.31	.030	.030	39	0	100	7.3	1.8
25...	.010	.03	.48	.010	.010	46	0	108	7.6	.0
FEB.										
08...	.000	.03	.07	.020	.030	44	0	106	--	.1
22...	.000	.03	.28	.010	.010	54	0	140	7.7	2.0
MAR.										
14...	.000	.15	.44	.020	.12	53	0	130	7.5	4.7
28...	.030	.04	.35	.010	.030	48	0	115	7.5	3.9
APR.										
11...	.010	.00	.25	.010	.030	41	0	103	7.8	5.0
25...	.020	.03	.17	.000	.040	47	1	113	6.9	7.8
MAY										
09...	.000	.16	.24	.010	.13	26	0	66	7.1	6.5
23...	.010	.07	.12	.000	.060	22	1	51	7.1	6.2
JUNE										
13...	.010	.16	.10	.000	.070	28	0	0	7.3	7.2
27...	.000	.03	.08	.000	.030	17	0	45	7.1	9.4
JULY										
11...	.000	.10	.10	.010	.020	17	0	51	7.3	9.5
25...	.010	.03	.17	.000	.020	19	0	54	7.3	11.2
AUG.										
08...	.010	.10	.05	.000	.020	19	0	59	7.1	14.8
22...	.000	.36	.17	.020	.27	31	0	75	7.4	15.8
SEP.										
12...	.000	.09	.16	.010	--	37	0	95	7.6	10.6
26...	.000	.04	.16	.010	.020	37	--	105	6.6	6.7

12453000 ENTIAT RIVER NEAR ENTIAT, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
12...	8	1	11.5	350	5	--	0	0	.2	10
19...	1	1	11.5	940	3	--	1	2	.0	0
NOV.										
09...	12	2	12.3	400	0	--	6	0	.1	10
16...	8	2	12.5	400	11	--	2	0	.1	30
DEC.										
14...	14	2	14.0	200	0	--	10	2	.5	30
JAN.										
11...	14	1	13.8	200	--	2	1	4	.0	20
25...	7	1	14.3	110	--	0	1	1	.2	20
FEB.										
08...	10	1	14.1	150	--	0	0	1	.3	8
22...	27	2	13.5	120	--	0	2	2	.6	8
MAR.										
14...	20	20	12.5	400	--	0	9	170	2.4	150
28...	16	6	12.8	100	--	0	1	3	.1	10
APR.										
11...	13	4	12.4	150	--	0	1	8	.5	7
25...	5	5	12.5	120	--	0	1	1	.2	20
MAY										
09...	38	34	11.4	600	--	0	2	0	.0	20
23...	20	15	12.0	--	--	0	1	1	.4	0
JUNE										
13...	30	27	11.0	900	--	0	3	4	.0	10
27...	25	3	10.8	400	--	0	6	110	2.3	10
JULY										
11...	12	4	11.1	<1600	--	0	2	2	1.0	0
25...	10	3	10.8	275	--	0	7	18	2.7	10
AUG.										
08...	9	1	10.0	--	--	--	--	--	--	--
22...	34	34	9.4	2800	--	0	3	4	.5	10
SEP.										
12...	11	3	10.8	--	--	0	0	1	.2	0
26...	9	2	11.6	700	--	0	2	0	.2	30

12462520 WENATCHEE RIVER AT WENATCHEE, WASH.

LOCATION.--Lat 47°27'32", long 120°20'07", in SE¼NW¼ sec.28, T.23 N., R.20 E., Chelan County, at bridge on U.S. Highway 2, 1.3 miles north of Wenatchee, and at mile 1.1.

DRAINAGE AREA.--1,327 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1970, October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
12...	0830	662	7.8	4.4	3.1	1.5	49	40	1.3	1.8	.12
19...	0800	881	7.4	4.0	2.9	1.4	47	39	5.0	2.4	.17
NOV.											
09...	0815	1900	5.1	2.4	1.6	1.1	31	25	4.8	.4	.08
16...	0820	1790	5.5	2.6	2.0	1.0	32	26	1.5	1.1	.18
DEC.											
14...	0830	1110	5.3	3.1	2.4	1.2	39	32	5.8	1.4	.21
28...	0815	920	7.1	3.6	2.9	1.5	45	37	4.5	2.6	.14
JAN.											
25...	0800	1910	8.0	3.9	2.4	1.0	45	37	3.4	1.2	.19
FEB.											
08...	0745	1120	7.6	4.2	2.7	1.2	46	38	3.9	1.1	.13
22...	0830	2300	8.1	3.7	2.7	1.5	46	38	4.3	1.9	.07
MAR.											
14...	0830	7820	8.2	3.5	2.6	1.2	49	40	--	.6	.45
28...	0745	5230	8.0	3.8	2.5	1.3	48	39	3.3	.3	.09
APR.											
11...	0730	5310	7.0	3.4	2.4	1.1	45	37	3.6	.9	.14
25...	0820	3630	8.0	4.0	2.3	1.5	50	41	3.3	.8	.22
MAY											
09...	0800	10800	4.7	2.3	1.4	.9	32	26	2.8	.4	.11
23...	0830	16700	4.9	2.1	1.3	.6	23	19	4.3	.9	.15
JUNE											
13...	0800	16400	3.3	1.4	.4	.7	22	18	2.9	.7	.45
27...	0830	9860	3.6	1.6	1.2	.8	24	20	3.2	.8	.23
JULY											
11...	0830	8050	3.9	1.7	.8	.7	23	19	3.1	1.0	.17
25...	0800	6660	3.7	1.5	1.1	.8	21	17	3.9	1.0	.45
AUG.											
08...	0845	5070	3.8	1.3	1.1	.7	19	16	5.0	.7	.30
22...	0815	2710	5.1	2.3	1.8	.8	29	24	4.0	.6	.52
SEP.											
12...	0815	1260	6.1	3.2	2.8	1.1	39	32	4.0	1.3	.56
26...	0820	1910	5.2	2.6	1.8	.9	--	--	--	.6	.33

12462520 WENATCHEE RIVER AT WENATCHEE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
12...	.000	.08	.14	.000	.010	38	0	86	7.8	10.4
19...	.000	.06	.14	.010	.010	35	0	86	7.9	7.4
NOV.										
09...	.010	.00	.19	.010	.020	23	0	97	7.7	4.4
16...	.010	.05	.28	.010	.020	24	0	64	7.6	4.3
DEC.										
14...	.010	.03	.29	.000	.010	26	0	77	7.3	.2
29...	.010	.00	.33	.010	.010	33	0	110	7.5	.0
JAN.										
25...	.000	.03	.56	.010	.010	36	0	81	7.7	.0
FEB.										
08...	.000	.03	.09	.010	.010	34	0	88	7.4	.2
22...	.010	.04	.17	.000	.010	35	0	87	7.8	1.7
MAR.										
14...	.010	.22	.20	.010	.080	35	0	80	7.4	4.2
28...	.030	.02	.13	.010	.060	35	0	83	7.4	3.6
APR.										
11...	.010	.13	.12	.000	.030	31	0	74	7.5	5.0
25...	.020	.03	.05	.000	.040	36	0	87	7.7	7.2
MAY										
09...	.000	.02	.14	.000	.020	21	0	52	7.0	6.7
23...	.000	.01	.11	.000	.010	21	2	42	7.1	7.0
JUNE										
13...	.020	.08	.91	.000	.020	14	0	44	7.2	9.6
27...	.020	.03	.08	.000	.010	16	0	43	7.4	10.2
JULY										
11...	.010	.05	.16	.000	.010	17	0	54	7.5	10.4
25...	.010	.14	.17	.000	.010	15	0	45	7.3	12.4
AUG.										
08...	.000	.06	.09	.000	.010	15	0	43	6.9	16.5
22...	.010	.16	.10	.000	.020	22	0	61	7.6	16.2
SEP.										
12...	.010	.12	.17	.000	.000	28	0	75	7.5	11.0
26...	.010	.10	.05	.010	.030	27	--	77	5.0	7.0

WENATCHEE RIVER BASIN

12462520 WENATCHEE RIVER AT WENATCHEE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
12...	10	3	10.5	400	5	--	0	1	.2	10
19...	13	3	10.7	2800	4	--	1	0	.1	0
NOV.										
09...	16	1	12.4	1000	0	--	0	0	.1	20
16...	17	2	12.3	1000	--	--	--	--	--	--
DEC.										
14...	26	1	13.7	6000	1	--	0	1	.3	20
28...	12	1	14.3	400	1	--	0	0	.7	10
JAN.										
25...	16	1	13.4	700	--	0	8	2	1.2	8
FEB.										
08...	27	2	13.8	400	--	0	1	1	.3	8
22...	36	6	13.1	300	--	0	3	3	.9	20
MAR.										
14...	40	25	12.7	320	--	0	1	0	.4	10
28...	25	4	12.6	700	--	0	1	5	.0	10
APR.										
11...	17	4	12.2	500	--	0	1	2	.5	7
25...	25	3	12.0	--	--	0	2	1	.3	20
MAY										
09...	22	5	11.8	230	--	0	0	0	.0	20
23...	18	6	11.9	--	--	0	1	0	.5	50
JUNE										
13...	20	4	12.0	1000	--	0	1	2	.2	0
27...	16	2	10.8	440	--	0	0	0	1.0	0
JULY										
11...	14	2	10.6	325	--	0	2	2	2.0	0
25...	15	2	10.0	400	--	0	1	3	.8	0
AUG.										
08...	13	1	9.4	--	--	0	50	3	.3	10
22...	13	1	9.7	700	--	0	0	1	.4	0
SEP.										
12...	11	1	10.0	--	--	0	2	2	1.0	0
26...	12	2	10.7	1600	--	0	3	1	.3	0

12462600 COLUMBIA RIVER BELOW ROCK ISLAND DAM, WASH.

LOCATION.--Lat 47°18'40", long 120°05'02", in NW¼ sec.16, T.21 N., R.22 E., Douglas County, 1.3 miles downstream from gaging station, 2.3 miles downstream from Rock Island Dam, 13 miles southeast of Wenatchee, and at mile 451.1.

DRAINAGE AREA.--89,400 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
11...	1900	92200	19	4.3	1.8	1.2	74	61	13	1.4	.12
18...	1600	126000	18	4.1	1.6	.7	73	60	11	1.8	.13
NOV.											
08...	1615	81700	19	4.2	1.6	.9	70	57	10	.9	.12
15...	1530	81600	19	4.0	2.6	1.2	72	59	14	1.4	.43
JAN.											
24...	1610	80300	23	5.4	4.3	.9	89	73	16	1.6	.22
FEB.											
07...	1540	100000	22	4.8	1.8	.7	76	62	13	1.7	.11
21...	1600	147000	22	4.7	1.6	.9	81	66	14	2.3	.13
MAR.											
13...	1615	131000	21	5.0	3.5	1.3	82	67	17	1.0	.44
27...	1715	224000	21	4.8	2.4	1.0	74	61	16	1.2	.26
APR.											
10...	1645	176000	19	4.7	3.2	1.1	77	63	16	1.1	.15
24...	1515	125000	21	5.0	2.5	1.4	81	66	15	1.6	.63
MAY											
08...	1635	184000	20	4.9	2.7	1.0	79	65	15	.8	.21
22...	1615	276000	18	4.3	2.3	.7	67	55	13	.7	.44
JUNE											
12...	1630	411000	16	3.7	1.5	.8	59	48	9.2	1.2	.78
26...	1700	412000	17	3.7	1.8	.9	65	53	9.7	1.0	.38
JULY											
10...	1800	210000	18	3.9	1.3	.8	63	52	9.0	1.0	.16
24...	1730	174000	18	3.9	1.5	.8	63	52	8.8	1.0	.19
AUG.											
07...	1740	169000	18	3.6	1.7	.7	64	52	9.1	.2	.17
21...	1700	163000	17	3.7	1.6	.7	67	55	9.0	.6	.45
SEP.											
11...	1600	95600	19	4.0	2.5	.8	70	57	11	1.3	.09
25...	1700	94100	19	4.6	2.0	.9	73	60	12	1.0	.20

12462600 COLUMBIA RIVER BELOW ROCK ISLAND DAM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.											
11...	.000	.04	.09	.010	.030	100	65	4	165	8.0	16.5
18...	.000	.02	.09	.010	.020	96	62	2	100	8.2	15.2
NOV.											
08...	.000	.01	.11	.020	.040	90	65	7	175	8.0	11.3
15...	.000	.16	.27	.020	.040	96	64	5	165	7.8	12.4
JAN.											
24...	.010	.02	.73	.010	.030	122	80	7	178	8.0	2.2
FEB.											
07...	.010	.03	.05	.030	.030	100	75	12	166	7.6	2.1
21...	.010	.07	.22	.030	.040	122	74	8	173	8.4	3.5
MAR.											
13...	.010	.14	.24	.010	.10	110	73	6	177	6.4	5.3
27...	.020	.10	.19	.030	.080	118	72	12	153	7.7	5.2
APR.											
10...	.010	.02	.20	.010	.040	166	67	4	154	8.0	7.5
24...	.010	.08	.11	.010	.040	116	73	7	163	8.1	10.4
MAY											
08...	.000	.03	.23	.020	.030	130	70	5	151	8.0	11.2
22...	.010	.06	.03	.010	.050	100	63	8	159	7.7	14.3
JUNE											
12...	.010	.28	.15	.010	.11	120	55	7	123	7.8	15.2
26...	.000	.03	.03	.000	.040	124	58	4	136	8.0	15.4
JULY											
10...	.000	.04	.13	.010	.030	84	61	9	137	8.0	15.4
24...	.010	.04	.21	.000	.020	72	61	9	140	8.0	18.6
AUG.											
07...	.010	.02	.10	.000	.020	102	60	7	138	7.9	16.8
21...	.010	.14	.10	.070	.10	94	58	3	142	8.0	19.6
SEP.											
11...	.010	.01	.25	.000	.010	84	64	7	114	8.0	18.7
25...	.010	.05	.16	.010	.060	96	66	7	151	8.0	15.6

DATE	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT.										
11...	8	2	9.6	150	1	--	1	2	.2	20
18...	10	2	9.3	300	3	--	1	4	.1	0
NOV.										
08...	13	1	10.3	150	0	--	1	0	.0	40
15...	7	1	10.0	80	13	--	0	0	.1	70
JAN.										
24...	8	1	13.6	--	--	0	1	3	.3	30
FEB.										
07...	15	2	14.9	40	--	0	2	5	.3	30
21...	18	4	14.3	20	--	0	2	2	.6	20
MAR.										
13...	18	15	15.4	300	--	0	2	3	1.0	140
27...	23	7	15.9	--	--	0	1	7	.1	70
APR.										
10...	18	4	14.6	75	--	0	3	26	.6	90
24...	15	3	14.0	100	--	0	2	0	.2	20
MAY										
08...	14	4	11.2	270	--	0	1	3	.0	8
22...	25	6	11.2	1600	--	0	1	2	.2	30
JUNE										
12...	30	26	12.0	<1600	--	0	4	4	.1	20
26...	29	2	11.4	400	--	0	3	6	1.4	20
JULY										
10...	17	3	11.9	900	--	0	2	2	1.7	30
24...	14	2	12.3	125	--	0	2	3	.8	10
AUG.										
07...	13	1	11.2	120	--	0	1	2	.2	10
21...	10	1	11.1	<800	--	0	2	2	.4	10
SEP.										
11...	13	1	10.1	--	--	0	2	2	.2	0
25...	13	11	9.8	400	--	0	20	2	1.1	30

12472600 CRAB CREEK NEAR BEVERLY, WASH.

LOCATION.--Lat 46°49'55", long 119°48'55", in NE¼SE¼ sec.33, T.16 N., R.24 E., Grant County, at Lower Crab Creek Road bridge, 1.5 miles upstream from gaging station, 5.7 miles east of Beverly, and at mile 4.5.

DRAINAGE AREA.--4,842 sq mi, upstream from gaging station, of which 665 sq mi in the vicinity of Soap Lake is noncontributing.

PERIOD OF RECORD.--Chemical analyses: August 1959 to September 1972 (discontinued).
Water temperatures: August 1959 to September 1962, July 1968 to August 1970.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
11...	1730	262	44	29	100	16	348	285
[illegible]...	1450	267	44	30	95	14	341	280
NOV.								
08...	1500	251	48	30	110	19	361	296
15...	1350	252	49	31	120	16	379	311
DEC.								
13...	1610	239	49	32	110	13	354	290
27...	1430	202	52	35	120	15	372	306
JAN.								
24...	1435	140	53	32	100	14	361	296
FEB.								
21...	1430	211	52	32	120	15	389	319
MAR.								
13...	1445	210	45	31	110	14	363	298
27...	1520	168	44	31	110	14	345	283
APR.								
10...	1530	183	44	31	100	12	316	259
24...	1440	161	45	30	94	17	300	246
MAY								
08...	1515	153	37	28	90	13	305	250
22...	1445	165	51	35	170	17	363	298
JUNE								
12...	1450	152	44	28	88	12	312	256
26...	1545	144	43	29	97	13	322	264
JULY								
10...	1545	130	41	27	92	14	303	249
24...	1630	155	39	27	97	12	278	228
AUG.								
07...	1615	190	39	26	91	11	277	227
21...	1530	240	43	26	92	14	300	246
SEP.								
11...	1500	200	43	28	86	11	297	249
25...	1550	245	46	30	97	8.0	321	263

12472600 CRAB CREEK NEAR BEVERLY, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
11...	120	34	.20	.020	.12	.66	.060	.11	230
18...	120	33	.26	.020	.12	.73	.020	.090	230
NOV.									
08...	140	45	.17	.020	.07	1.6	.070	.10	240
15...	150	50	.86	.020	.20	1.2	.070	.13	250
DEC.									
13...	140	49	.76	.030	.20	1.5	.12	.18	250
27...	150	51	.73	.030	.12	2.4	.10	.14	280
JAN.									
24...	150	47	.45	.030	.11	2.2	.060	.15	260
FEB.									
21...	150	50	1.1	.030	.29	1.5	.12	.24	260
MAR.									
13...	150	49	1.5	.030	.36	1.3	.060	.30	240
27...	140	46	1.1	.030	.30	.29	.010	.30	240
APR.									
10...	130	44	.88	.030	.16	1.4	.040	.18	240
24...	140	46	.78	.050	.17	1.3	.050	.20	240
MAY									
08...	130	44	2.4	.070	.28	1.2	.070	.28	210
22...	230	62	4.0	.100	.32	1.1	.040	.49	270
JUNE									
12...	120	39	1.4	.040	.19	1.1	.060	.31	230
26...	130	42	1.8	.030	.15	.86	.060	.33	230
JULY									
10...	130	41	1.3	.030	.15	.73	.050	.15	210
24...	110	37	2.1	.050	.31	.51	.010	.12	210
AUG.									
07...	110	37	3.9	.030	.26	.72	.010	.14	200
21...	120	37	1.6	.000	.20	.57	.060	.15	210
SEP.									
11...	110	37	1.7	.020	.20	1.2	.030	1.2	220
25...	130	39	1.5	.040	.26	.09	.050	.13	240

12472600 CRAB CREEK NEAR BEVERLY, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL. PER 100 ML)
OCT.								
11...	0	840	8.5	16.6	41	20	10.6	2000
18...	0	850	8.4	10.7	7	10	12.6	800
NOV.								
08...	0	910	8.3	4.9	29	4	14.3	250
15...	0	960	8.5	8.9	22	9	13.5	130
DEC.								
13...	0	940	8.3	.6	23	6	13.9	250
27...	0	960	8.2	.1	26	10	14.2	200
JAN.								
24...	0	939	8.4	1.4	29	9	14.0	--
FEB.								
21...	0	960	8.4	6.7	41	40	12.1	200
MAR.								
13...	0	943	7.3	13.5	46	40	11.2	600
27...	0	921	8.5	11.2	39	45	12.1	200
APR.								
10...	0	855	8.7	14.4	33	31	12.2	1000
24...	0	870	8.4	16.5	34	29	14.0	1500
MAY								
08...	0	835	8.3	12.3	34	53	10.1	1500
22...	0	1330	8.4	17.9	73	70	9.7	13000
JUNE								
12...	0	129	8.3	18.8	33	41	9.4	1000
26...	0	913	8.4	21.3	27	60	9.2	4000
JULY								
10...	0	890	8.6	22.0	41	23	11.7	1500
24...	0	833	8.7	23.5	41	28	10.3	1000
AUG.								
07...	0	823	8.5	31.2	37	33	10.6	250
21...	0	862	8.3	27.7	47	10	9.3	3500
SEP.								
11...	0	816	8.3	19.0	33	21	9.4	--
25...	0	871	8.4	13.5	35	12	11.1	5000

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WASH.

LOCATION.--Lat 46°37'44", long 119°51'49", in SE¼NW¼ sec.7, T.13 N., R.24 E., Grant County, 2.6 miles downstream from Priest Rapids Dam, 14.7 miles south of Beverly, and at mile 394.5.

DRAINAGE AREA.--96,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
11...	1630	106000	19	4.2	2.2	1.0	74	61	12	1.5	.12
18...	1410	91600	19	4.2	2.4	3.1	73	60	13	2.0	.13
NOV.											
08...	1410	101000	19	4.4	2.3	1.1	74	61	11	.7	.08
15...	1300	104000	19	4.0	2.7	1.5	72	59	11	2.0	.79
DEC.											
13...	1515	146000	21	4.7	2.0	.7	76	62	15	1.0	.02
27...	1340	132000	20	4.5	2.1	1.1	75	62	13	1.9	.15
JAN.											
24...	1350	132000	21	4.9	2.3	.8	79	65	14	1.1	.12
FEB.											
07...	1335	107000	22	4.8	2.0	.8	78	64	14	1.7	.06
21...	1350	135000	21	4.7	2.4	1.1	82	67	14	1.8	.13
MAR.											
13...	1410	172000	21	4.9	2.1	1.2	80	66	14	1.2	.30
27...	1430	151000	21	4.9	2.4	1.0	77	63	16	1.2	.31
APR.											
10...	1440	215000	20	4.8	3.0	.9	77	63	16	.6	.14
24...	1325	136000	21	4.9	2.4	1.4	80	66	14	1.6	.19
MAY											
08...	1425	175000	20	4.9	2.5	1.0	76	62	15	.6	.19
22...	1340	314000	19	4.4	2.7	.7	68	56	14	.9	.39
JUNE											
12...	1410	404000	16	3.6	1.4	.9	64	52	9.5	1.8	.93
26...	1435	410000	17	3.7	1.8	.8	65	53	9.8	.7	.37
JULY											
10...	1440	241000	17	3.6	1.3	.7	56	46	16	1.0	.84
24...	1530	197000	18	3.8	1.6	.8	64	52	8.6	1.0	.16
AUG.											
07...	1500	180000	18	3.7	1.6	.7	65	53	9.6	.3	.24
21...	1440	144000	18	3.7	1.7	.7	67	55	9.5	.9	.79
SEP.											
11...	1410	131000	19	3.9	2.4	.7	69	57	9.8	1.3	.11
25...	1510	92000	18	4.2	1.9	9.0	70	57	11	.6	.13

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)
OCT.										
11...	.000	.05	.11	.010	.030	82	65	4	140	7.8
18...	.000	.06	.07	.010	.020	98	65	5	140	7.8
NOV.										
08...	.000	.01	.16	.020	.030	90	66	5	145	7.7
15...	.010	.21	.31	.020	.050	88	64	5	145	7.8
DEC.										
13...	.010	.01	.20	.010	.030	92	72	9	151	7.4
27...	.010	.00	.25	.020	.030	88	68	7	148	7.6
JAN.										
24...	.000	.03	.45	.030	.030	90	73	8	156	7.9
FEB.										
07...	.010	.01	.04	.030	.040	78	75	11	171	7.6
21...	.000	.05	.18	.030	.040	112	72	5	165	7.8
MAR.										
13...	.010	.05	.32	.030	.060	152	73	7	150	6.5
27...	.010	.07	1.5	.010	.070	136	73	9	158	7.8
APR.										
10...	.010	.03	.14	.020	.050	154	70	7	156	8.0
24...	.010	.05	.05	.010	.060	130	73	7	159	[illegible]
MAY										
08...	.000	.05	.04	.010	.030	154	70	8	164	[illegible]
22...	.000	.05	.07	.010	.050	100	66	10	370	[illegible]
JUNE										
12...	.010	.30	1.1	.000	.080	134	55	2	120	7.6
26...	.000	.05	.10	.010	.030	112	58	4	134	7.7
JULY										
10...	.000	.18	.15	.010	.030	112	57	11	150	[illegible]
24...	.010	.02	.22	.000	.020	70	61	8	135	[illegible]
AUG.										
07...	.010	.04	.08	.000	.020	104	60	7	144	[illegible]
21...	.010	.24	.10	.010	.020	104	60	5	139	7.
SEP.										
11...	.000	.01	.10	.000	.010	82	63	7	140	[illegible]
25...	.010	.03	.30	.010	.030	98	62	5	130	[illegible]

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
11...	17.9	9	4	9.9	100	--	--	--	--	--
18...	15.1	26	2	10.0	2000	--	2	2	.1	0
NOV.										
08...	10.5	12	2	10.8	>100	--	--	--	--	--
15...	11.7	5	2	10.4	50	--	--	--	--	--
DEC.										
13...	6.2	27	2	11.7	50	--	--	--	.3	10
27...	5.2	7	1	12.5	--	--	--	--	--	--
JAN.										
24...	3.0	8	2	13.2	--	0	1	2	1.1	20
FEB.										
07...	1.8	7	2	13.5	30	0	6	3	.5	30
21...	3.6	12	10	13.6	50	0	2	3	.8	20
MAR.										
13...	4.7	12	4	15.4	60	0	1	4	.3	50
27...	5.1	21	7	15.9	65	0	1	0	.1	60
APR.										
10...	7.8	17	4	14.6	250	0	1	8	.6	80
24...	10.0	13	3	11.3	100	0	1	3	.2	50
MAY										
08...	9.4	12	4	13.3	130	0	1	5	.0	40
22...	11.7	21	9	13.8	400	0	1	5	.3	50
JUNE										
12...	13.1	33	29	13.0	400	0	9	76	5.3	40
26...	13.6	16	5	12.8	200	0	2	6	.7	50
JULY										
10...	15.2	18	3	12.0	400	0	2	5	.2	20
24...	17.5	12	4	11.6	1300	0	2	5	.3	20
AUG.										
07...	19.2	13	2	11.3	110	0	0	2	.1	10
21...	18.9	9	2	11.0	120	0	2	2	.6	30
SEP.										
11...	18.7	14	1	10.1	400	0	2	4	3.3	0
25...	14.8	12	1	11.0	220	0	10	1	2.5	20

12477600 YAKIMA RIVER ABOVE CLE ELUM RIVER NEAR CLE ELUM, WASH.

LOCATION.--Lat 47°11'10", long 121°02'31", in NW¼ sec.36, T.20 N., R.14 E., Kittitas County, at bridge on Interstate 90, 4.5 miles upstream from Cle Elum River, and 4.5 miles west of Cle Elum.

DRAINAGE AREA.--248 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT.								
11...	1120	470	.13	.000	.05	.01	.000	.010
18...	1115	220	.12	.000	.03	.02	.010	.030
NOV.								
08...	1040	490	.07	.010	.01	.13	.010	.020
15...	0950	480	.22	.020	.07	.27	.010	.020
DEC.								
13...	1010	530	.12	.000	.02	.08	.000	.010
27...	0940	300	.06	.000	.00	.07	.000	.000
JAN.								
24...	1030	620	.09	.000	.03	.37	.000	.010
FEB.								
07...	1000	600	.02	.000	.01	.04	.000	.000
21...	1040	1200	.03	.000	.01	.13	.010	.010
MAR.								
13...	1040	2800	.27	.010	.09	.17	.010	.030
27...	1045	2550	.12	.000	.02	.21	.000	.050
APR.								
10...	1045	2300	.01	.000	.00	.03	.000	.010
24...	1015	2350	.15	.010	.08	.02	.000	.040
MAY								
08...	1040	2150	.07	.000	.03	.06	.000	.010
22...	1000	2500	.24	.000	.08	.04	.000	.040
JUNE								
12...	1045	450	.36	.010	.03	.01	.000	.010
26...	1105	1900	.30	.000	.06	.02	.000	.010
JULY								
10...	1050	440	.47	.000	.10	.10	.000	.030
24...	1145	380	.71	.010	.18	.13	.010	.020
AUG.								
07...	1115	220	2.3	.010	.20	.06	.000	.020
21...	1050	420	.02	.010	.01	.02	.010	.010
SEP.								
11...	1045	360	.15	.000	.01	.05	.010	.010
25...	1145	430	.05	.000	.01	.08	.010	.030

12477600 YAKIMA RIVER ABOVE CLE ELUM RIVER NEAR CLE ELUM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
OCT.								
11...	--	37	7.6	12.6	7	1	10.3	200
18...	40	46	7.5	9.6	4	2	10.2	230
NOV.								
08...	--	54	7.3	5.6	11	1	12.0	100
15...	47	53	7.0	6.4	13	4	11.1	100
DEC.								
13...	46	53	7.0	2.3	8	1	12.3	70
27...	50	54	7.1	1.5	11	1	12.4	60
JAN.								
24...	50	57	7.1	1.4	20	1	12.9	--
FEB.								
07...	30	50	7.3	2.7	1	1	12.8	30
21...	66	53	7.3	2.2	14	2	12.3	20
MAR.								
13...	56	46	6.8	3.7	16	6	13.0	70
27...	66	41	7.0	3.0	18	3	12.9	350
APR.								
10...	56	50	7.4	4.3	8	1	12.4	20
24...	60	45	7.0	5.2	9	2	11.6	34
MAY								
08...	60	45	7.0	5.5	14	5	11.4	270
22...	41	47	7.1	6.9	20	17	11.4	170
JUNE								
12...	88	56	7.3	8.0	10	3	10.2	150
26...	64	45	7.2	9.7	21	1	10.6	200
JULY								
10...	54	64	7.0	12.7	7	2	9.8	325
24...	37	61	7.2	14.2	11	1	9.6	150
AUG.								
07...	74	81	7.1	16.6	11	1	8.7	110
21...	56	54	7.2	--	8	1	9.6	140
SEP.								
11...	46	57	7.3	10.2	8	1	9.3	200
25...	--	50	7.4	10.5	8	1	10.3	240

12479300 CLE ELUM RIVER NEAR CLE ELUM, WASH.

LOCATION.--Lat 47°11'05", long 121°00'10", in NW¼ sec.32, T.20 N., R.15 E., Kittitas County, at bridge on Interstate 90, 0.7 mile upstream from mouth, and 2.8 miles west of Cle Elum.

DRAINAGE AREA.--221 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT.								
11...	1245	650	.14	.000	.03	.09	.000	.020
18...	1135	340	.11	.000	.05	.02	.010	.020
NOV.								
08...	1105	5.0	.06	.000	.01	.11	.000	.010
15...	1010	5.0	.13	.000	.05	.32	.010	.020
DEC.								
13...	1045	5.0	.13	.000	.02	.11	.000	.010
27...	1000	305	.09	.000	.00	.12	.000	.000
JAN.								
24...	1050	630	.09	.000	.02	.37	.000	.010
FEB.								
07...	1025	820	.06	.000	.01	.03	.000	.000
21...	1105	660	.04	.000	.03	.03	.000	.000
MAR.								
13...	1105	2400	.32	.010	.06	.13	.000	.070
27...	1120	4400	.03	.000	.00	.07	.000	.030
APR.								
10...	1115	4480	.00	.010	.00	.05	.000	.000
24...	1030	4000	.02	.010	.01	.02	.000	.010
MAY								
08...	1100	2300	.04	.000	.01	.06	.000	.000
22...	1015	2000	.18	.000	.01	.03	.020	--
JUNE								
12...	1110	1250	.97	.000	.03	.01	.000	.000
26...	1125	3600	.37	.000	.09	.05	.000	.010
JULY								
10...	1125	1220	.38	.000	.07	.07	.000	.010
24...	1215	1610	.29	.000	.13	.14	.000	.010
AUG.								
07...	1145	2840	1.4	.010	.23	.05	.000	.020
21...	1115	--	.53	.000	.13	.03	.010	.020
SEP.								
11...	1110	2000	.60	.000	.09	.03	.000	.010
25...	1210	1380	.68	.010	.19	.18	.010	.030

12479300 CLE ELUM RIVER NEAR CLE ELUM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
OCT.								
11...	--	39	7.4	13.3	5	1	10.3	100
18...	40	47	7.4	10.5	7	1	10.5	180
NOV.								
08...	--	109	7.4	5.7	9	1	11.8	100
15...	68	113	7.4	5.8	4	2	11.3	90
DEC.								
13...	94	136	7.6	1.0	10	2	12.8	40
27...	40	57	7.3	2.7	5	1	12.2	85
JAN.								
24...	38	58	7.4	2.2	7	1	13.3	--
FEB.								
07...	24	51	7.4	3.2	9	1	13.3	20
21...	43	68	7.6	2.6	15	1	13.1	36
MAR.								
13...	42	56	7.1	3.9	13	3	12.7	23
27...	70	49	7.3	3.2	12	1	12.6	250
APR.								
10...	68	48	7.4	5.4	7	1	12.3	20
24...	70	50	7.2	5.0	8	1	11.6	>20
MAY								
08...	42	57	7.3	6.1	6	1	11.6	<20
22...	52	65	7.3	8.4	8	1	11.6	20
JUNE								
12...	84	74	7.7	10.2	8	1	10.3	48
26...	82	48	7.4	11.4	10	1	9.8	100
JULY								
10...	44	58	6.9	14.9	8	3	9.3	<400
24...	34	48	7.4	17.2	6	1	8.6	80
AUG.								
07...	54	47	7.1	19.6	7	1	8.4	440
21...	48	--	--	--	--	--	--	--
SEP.								
11...	52	44	7.1	10.3	11	2	10.5	40
25...	46	48	7.4	10.5	8	3	11.0	70

12500010 YAKIMA RIVER NEAR TERRACE HEIGHTS, WASH.

LOCATION.--Lat 46°36'21", long 120°28'27", in NW¼NE¼ sec.20, T.13 N., R.19 E., Yakima County, at Terrace Heights Way bridge 1.6 miles west of Terrace Heights and at mile 113.2.

DRAINAGE AREA.--3,250 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1970 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by the Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT.								
11...	1455	1690	.13	.000	.07	.07	.030	.050
18...	1310	1560	.13	.010	.07	.13	.020	.050
NOV.								
08...	1305	2100	.09	.000	.02	.14	.020	.040
15...	1200	2060	.14	.010	.08	.33	.020	.040
DEC.								
13...	1330	2060	.19	.010	.04	.21	.010	.020
27...	1150	1830	.15	.010	.02	.30	.020	.020
JAN.								
24...	1250	4230	.23	.010	.07	.63	.020	.040
FEB.								
07...	1225	3420	.21	.000	.07	.07	.020	.040
21...	1245	6300	.09	.000	.08	.34	.040	.070
MAR.								
13...	1255	18300	.58	.010	.18	.50	.040	.25
27...	1310	14500	.20	.000	.07	.34	.010	.090
APR.								
10...	1330	14100	.15	.010	.03	.06	.010	.060
24...	1230	11000	.11	.010	.04	.06	.010	.040
MAY								
08...	1255	13400	.18	.000	.08	.10	.030	.070
22...	1220	16800	.34	.020	.12	.12	.030	.12
JUNE								
12...	1255	10900	.44	.010	.08	.08	.020	.10
26...	1320	10300	.41	.000	.08	.09	.030	.040
JULY								
10...	1320	4020	.28	.000	.04	.07	.000	.020
24...	1420	3530	.64	.010	.14	.16	.010	.030
AUG.								
07...	1400	3480	.76	.010	.09	.15	.040	.060
21...	1340	3530	.80	.010	.17	.15	.040	.040
SEP.								
11...	1310	3180	.28	.000	.04	.13	.010	.030
25...	1355	3500	.23	.010	.06	1.3	.020	.050

12500010 YAKIMA RIVER NEAR TERRACE HEIGHTS, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	INTERMEDIATE COLIFORM (COL. PER 100 ML)
OCT.							
11...	121	8.1	15.4	12	3	12.1	300
18...	119	7.0	8.8	8	1	11.4	300
NOV.							
08...	117	7.7	4.8	17	1	13.1	100
15...	125	7.7	7.2	8	3	11.9	100
DEC.							
13...	112	7.1	.6	14	1	14.2	200
27...	120	7.5	.7	10	1	13.6	140
JAN.							
24...	102	7.5	1.4	22	5	13.4	--
FEB.							
07...	97	7.5	.8	10	8	14.1	80
21...	112	7.6	4.1	38	25	12.4	580
MAR.							
13...	90	7.1	6.2	70	65	12.8	2000
27...	75	7.5	5.1	29	15	12.8	150
APR.							
10...	75	7.6	7.9	23	10	12.3	800
24...	71	7.5	8.3	20	10	11.6	420
MAY							
08...	74	7.5	8.3	35	19	11.6	1400
22...	89	7.5	9.8	38	32	10.9	2200
JUNE							
12...	71	7.5	11.5	31	26	10.5	1500
26...	82	7.4	12.9	14	5	9.9	1200
JULY							
10...	109	7.6	14.8	18	2	9.5	2750
24...	116	7.6	18.9	21	3	9.2	1250
AUG.							
07...	110	7.5	21.4	18	3	8.6	1000
21...	120	7.3	17.6	17	2	10.0	1200
SEP.							
11...	99	7.5	13.8	18	4	9.9	2500
25...	100	8.2	10.9	13	4	11.9	1500

12510500 YAKIMA RIVER AT KIONA, WASH.

LOCATION.--Lat 46°15'10", long 119°28'35", in SE¼NE¼ sec.19, T.9 N., R.27 E., Benton County, at highway bridge, 0.1 mile downstream from gaging station at Kiona, 3.7 miles downstream from Corral Canyon Creek, 5.1 miles downstream from intake of Kiona Canal, and at mile 29.8.

DRAINAGE AREA.--5,615 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1952 to September 1972.
Water temperatures: December 1952 to September 1972.

EXTREMES.--1971-72:
Specific conductance: Maximum daily, 347 micromhos Oct. 10; minimum daily, 104 micromhos Apr. 3, June 9, 18.
Water temperatures: Maximum, 26.0°C July 30, Aug. 9; minimum, freezing point on several days during winter months.

Period of record:
Specific conductance: Maximum daily, 674 micromhos Dec. 3, 1970; minimum daily, 99 micromhos Dec. 17, 1959.
Water temperatures: Maximum, 29.0°C July 18, 1960, July 12, 1961; minimum, freezing point on several days during winter months most years.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
05...	1015	2320	29	11	20	2.9	160	131
19...	0935	2820	27	10	17	3.3	151	124
NOV.								
16...	0940	2900	--	--	--	--	--	--
DEC.								
07...	1055	2840	23	8.7	18	2.9	132	108
14...	1105	2860	22	8.3	15	2.3	120	98
JAN.								
10...	1125	3080	19	8.0	14	2.9	114	94
FEB.								
01...	1105	4340	16	6.6	10	2.2	97	80
08...	1115	4340	16	6.0	9.3	1.7	89	73
22...	1315	7220	14	5.4	8.1	1.9	82	67
MAR.								
14...	1120	17200	11	3.7	5.5	1.8	67	55
APR.								
04...	0915	17000	10	3.8	5.7	1.4	59	48
11...	1055	15200	9.7	3.9	5.4	1.2	62	51
18...	1125	11800	11	3.6	5.4	1.2	59	48
MAY								
10...	1010	12800	12	4.1	5.9	1.4	66	54
23...	1425	16100	12	4.2	5.9	1.3	64	52
JUNE								
13...	1500	11600	13	4.2	6.8	1.5	72	59
27...	1435	9450	13	4.4	6.9	1.4	73	60
JULY								
11...	1715	2510	26	8.4	15	3.2	148	121
25...	1540	1640	29	10	18	3.1	152	125
AUG.								
08...	1430	1470	30	11	20	3.7	167	137
22...	1315	2320	26	9.7	17	3.3	150	123
SEP.								
12...	1320	2280	27	10	18	2.9	149	122

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
05...	32	4.6	.14	.070	.07	1.1	.090	.090	120
19...	27	4.2	.17	.020	.10	.90	.060	.1[illegible]	110
NOV.									
16...	--	--	--	--	--	--	--	--	--
DEC.									
07...	17	5.6	.27	.020	.10	1.1	.090	.11	93
14...	15	6.2	.23	.040	.10	.82	.000	.11	89
JAN.									
10...	13	5.4	.45	.020	.12	1.1	.080	.11	80
FEB.									
01...	9.7	4.0	.33	.010	.17	.70	.060	.090	67
08...	9.3	4.6	.51	.010	.10	.20	.050	.080	65
22...	6.8	3.7	.65	.020	.14	.59	.030	.17	57
MAR.									
14...	4.5	2.2	.90	.020	.32	.33	.040	.34	43
APR.									
04...	4.1	2.3	.62	.040	.26	.25	.040	.14	41
11...	5.1	1.3	.24	.020	.04	.22	.020	.13	40
18...	4.3	1.6	.15	.020	.08	.25	.040	.12	42
MAY									
10...	5.3	2.3	.46	.010	.18	.32	.040	.16	47
23...	4.9	2.1	.53	.010	.10	.25	.050	.18	47
JUNE									
13...	6.4	1.8	.45	.010	.09	.34	.080	.20	50
27...	6.7	2.1	.33	.010	.03	.30	.000	.010	51
JULY									
11...	15	5.0	.71	.020	.09	.98	.060	.11	99
25...	19	5.0	.63	.020	.07	.80	.050	.080	110
AUG.									
08...	21	6.7	.68	.020	.12	.91	.060	.13	120
22...	17	5.3	.36	.010	.06	.90	.070	.11	100
SEP.									
12...	18	5.8	.53	.010	.12	.24	.080	.11	110

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)
OCT.								
05...	0	313	7.6	15.3	43	6	9.6	3000
19...	0	292	7.7	10.6	21	6	9.8	1000
NOV.								
16...	--	265	8.0	8.2	13	3	11.0	1200
DEC.								
07...	0	268	8.0	2.9	31	6	12.2	900
14...	0	244	7.5	2.3	62	45	12.9	10000
JAN.								
10...	0	230	8.0	3.6	23	5	12.2	--
FEB.								
01...	0	187	7.8	.0	26	8	13.5	60
08...	0	170	8.2	2.0	31	9	12.2	20
22...	0	160	7.9	5.5	43	25	11.4	1400
MAR.								
14...	0	122	7.7	--	61	45	14.6	3500
APR.								
04...	0	119	7.6	9.4	36	29	11.0	1200
11...	0	106	8.0	10.0	24	15	10.0	900
18...	0	107	7.7	9.6	23	21	8.4	3300
MAY								
10...	0	91	7.6	12.0	50	37	10.0	3000
23...	0	85	7.5	15.3	31	15	10.1	2500
JUNE								
13...	0	130	7.6	16.8	25	35	14.8	10000
27...	0	142	7.7	19.6	37	15	9.3	[illegible]
JULY								
11...	0	270	8.2	19.5	21	17	11.6	[illegible]
25...	0	322	[illegible]	23.3	--	[illegible]	10.[illegible]	[illegible]
AUG.								
08...	0	360	[illegible]	27.5	[illegible]	[illegible]	[illegible]	[illegible]
22...	0	310	[illegible]	21.5	[illegible]	[illegible]	[illegible]	[illegible]
SEP.								
12...	0	309	[illegible]	17.0	[illegible]	[illegible]	[illegible]	[illegible]

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	TEMPER-ATURE (DEG C)	ALDRIN (UG/L)	ALDRIN IN BOTTOM DE-POSITS (UG/KG)	CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM DE-POSITS (UG/KG)	DDD (UG/L)	DDD IN BOTTOM DE-POSITS (UG/KG)	DDE (UG/L)	DDE IN BOTTOM DE-POSITS (UG/KG)
JAN. 19...	1530	5.0	.00	<.2	.0	<1.0	.00	<.2	.00	<.2
APR. 03...	1025	8.0	.00	--	.0	--	.00	--	.00	--
JUNE 30...	1015	--	.00	<.2	.0	<1.0	.00	.7	.01	1.2
SEP. 08...	1445	19.0	.00	--	.0	--	.00	--	.00	--

DATE	DDT (UG/L)	DDT IN BOTTOM DE-POSITS (UG/KG)	DI-AZINON (UG/L)	DI-ELDRIN (UG/L)	DI-ELDRIN IN BOTTOM DE-POSITS (UG/KG)	ENDRIN (UG/L)	ENDRIN IN BOTTOM DE-POSITS (UG/KG)	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM DE-POSITS (UG/KG)	HEPTA-CHLOR EPOXIDE (UG/L)
JAN. 19...	.00	<.2	.01	.00	<.2	.00	<.2	.00	<.2	.00
APR. 03...	.00	--	--	.00	--	.00	--	.00	--	.00
JUNE 30...	.00	2.9	.01	.01	<.2	.00	<.2	.00	<.2	.00
SEP. 08...	.00	--	.01	.00	--	.00	--	.00	--	.00

DATE	HEPTA-CHLOR EPOXIDE IN BOT-TOM DE-POSITS (UG/KG)	LINDANE (UG/L)	LINDANE IN BOTTOM DE-POSITS (UG/KG)	MALA-THION (UG/L)	METHYL PARA-THION (UG/L)	PARA-THION (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
JAN. 19...	<.2	.00	<.2	.00	.00	.00	.00	.00	.00
APR. 03...	--	.00	--	--	--	--	.00	.00	.00
JUNE 30...	<.2	.00	<.2	.00	.00	.00	.08	.00	.00
SEP. 08...	--	.00	--	.00	.00	.00	.03	.00	.00

YAKIMA RIVER BASIN

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	299	266	271	276	186	120	105	114	106	164	284	320
2	303	272	274	269	186	117	105	118	112	167	264	320
3	296	277	278	246	186	132	104	123	120	171	299	312
4	304	271	274	230	191	134	106	140	117	178	307	313
5	318	271	270	226	185	131	110	157	110	185	307	308
6	317	236	259	239	177	126	113	148	108	172	308	304
7	325	234	267	242	172	124	108	129	107	175	313	304
8	332	236	258	223	179	125	105	125	106	181	319	302
9	334	248	249	222	167	138	110	125	104	198	332	292
10	347	254	255	229	154	139	106	121	107	236	342	268
11	346	260	252	228	161	124	109	125	108	254	316	267
12	346	265	249	225	165	121	110	130	106	248	302	281
13	344	267	246	225	165	115	116	123	128	253	295	291
14	340	266	241	203	159	117	119	121	137	256	304	294
15	341	263	247	206	158	122	118	115	120	215	300	296
16	324	259	251	214	163	128	115	112	110	151	301	295
17	312	264	253	216	156	132	115	112	106	152	295	290
18	282	260	257	220	129	127	110	125	104	165	274	295
19	295	263	256	219	136	119	113	129	106	178	255	300
20	306	270	253	217	146	120	117	131	107	186	257	300
21	288	270	249	213	154	122	115	132	108	194	271	288
22	294	266	256	147	153	124	111	145	108	216	286	291
23	287	266	264	148	160	121	115	122	112	248	290	286
24	277	258	264	152	166	114	113	122	110	273	296	257
25	262	261	267	158	172	113	118	136	121	290	302	255
26	257	258	257	169	173	116	119	135	131	311	301	259
27	256	257	254	176	171	110	121	127	132	267	306	262
28	243	258	254	192	172	112	115	126	134	321	311	266
29	231	257	256	205	125	108	114	121	141	332	316	284
30	241	260	261	209	---	106	114	108	152	334	318	290
31	266	---	268	203	---	106	---	110	---	314	315	---
MONTH	300	260	258	211	164	121	112	126	116	225	300	290
YEAR	207											

12510500 YAKIMA RIVER AT KIONA, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN.	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.5	6.0	6.0	3.5	0.0	4.5	8.5	9.0	15.0	18.5	24.5	18.5
2	13.0	6.0	6.0	2.0	0.0	4.5	8.5	10.0	16.5	18.0	20.5	18.5
3	15.0	6.5	6.0	0.5	0.0	1.0	7.0	10.0	16.5	18.5	21.0	19.0
4	14.0	8.5	5.0	1.0	0.0	2.0	7.0	11.5	16.0	18.5	21.0	19.0
5	15.0	6.5	4.5	1.0	0.0	6.0	8.5	15.0	14.5	19.0	21.0	19.0
6	15.0	5.5	4.5	1.5	0.5	4.5	8.5	13.5	18.0	20.0	21.0	17.0
7	14.5	6.0	4.0	2.0	0.5	4.5	8.0	14.5	20.5	20.0	21.5	18.5
8	14.5	5.5	1.5	1.0	1.0	4.5	8.0	12.0	16.5	19.0	22.0	16.5
9	15.0	5.5	3.0	1.0	0.5	4.5	7.0	11.5	17.0	19.5	26.0	16.0
10	15.0	7.0	3.0	0.0	1.0	7.0	6.0	10.0	15.5	18.0	22.0	16.5
11	15.0	7.0	5.0	3.5	1.5	7.0	7.0	11.0	14.5	16.5	25.0	15.0
12	14.0	8.5	0.0	4.0	4.0	8.0	8.5	12.0	13.5	18.0	20.5	15.0
13	11.5	6.0	0.5	3.0	4.0	7.0	6.0	15.0	14.0	19.5	21.0	14.5
14	12.0	9.5	0.0	1.5	3.5	7.0	9.5	---	14.5	20.5	20.0	15.0
15	11.5	6.0	2.0	0.5	4.0	6.5	9.0	14.0	16.5	20.5	20.0	16.0
16	11.5	8.0	3.0	0.0	4.5	7.0	9.5	12.0	16.0	19.5	19.5	16.0
17	7.0	6.5	4.0	2.0	4.5	5.5	6.5	11.0	15.5	20.0	17.0	17.0
18	9.0	6.0	4.5	3.0	4.0	6.0	9.0	10.0	15.5	20.0	18.5	16.0
19	10.0	6.0	4.0	3.5	4.0	9.5	8.0	10.5	15.5	19.5	18.0	14.5
20	9.5	7.0	4.0	5.5	5.0	8.0	10.0	13.5	16.0	19.0	18.5	13.5
21	9.5	5.0	4.5	5.0	4.5	5.0	8.5	13.5	16.0	18.0	18.5	14.0
22	10.0	6.0	4.5	5.5	4.5	8.5	7.0	11.5	16.5	19.5	21.5	12.0
23	10.5	6.0	4.5	4.0	4.5	4.5	9.5	11.0	14.5	21.0	19.0	11.5
24	10.0	6.0	4.5	3.0	4.5	6.5	8.0	11.5	14.0	20.0	---	12.0
25	10.0	6.0	4.5	1.5	4.0	6.0	9.0	11.0	14.0	19.0	19.5	10.5
26	9.0	---	3.5	0.0	4.5	6.0	8.5	11.5	15.5	20.5	20.0	---
27	9.0	6.0	1.5	0.0	6.0	6.5	9.5	14.0	15.0	20.5	21.0	10.5
28	7.0	7.0	1.0	0.0	7.0	5.5	10.0	15.0	16.0	20.5	21.0	10.5
29	6.0	6.5	1.5	0.5	5.5	6.5	10.0	16.5	17.0	25.0	21.0	11.0
30	6.0	6.5	1.0	-0.5	---	6.5	10.0	18.0	18.0	26.0	20.5	---
31	6.0	---	1.0	---	---	7.0	---	17.0	---	22.0	19.5	---
MONTH	11.0	6.5	3.5	1.0	3.0	6.0	8.5	12.5	16.0	20.0	20.5	15.0

13343500 SNAKE RIVER NEAR CLARKSTON, WASH.
(International hydrologic decade station)

LOCATION (revised).--Lat 46°25'41", long 117°09'51", in SE¼SE¼ sec.16, T.11 N., R.45 E., Whitman County, at gaging station 7 miles downstream from Clarkston, and at mile 132.9.

DRAINAGE AREA.--103,200 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: November 1951 to February 1956, October 1966 to September 1972.

REMARKS.--Each analyses presented below represents a composit of four samples taken at cableway cross section 1,200 ft upstream from gage.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT.											
14...	1010	31900	22	31	12	31	3.6	162	133	49	14
28...	1145	37000	--	32	12	30	4.0	159	130	38	15
NOV.											
19...	1105	34600	--	36	13	29	3.6	171	140	51	15
DEC.											
09...	0930	37600	--	38	14	28	3.8	123	101	42	17
JAN.											
13...	1330	34900	--	35	12	24	5.0	156	128	31	15
20...	1330	38400	23	31	12	22	3.5	156	128	36	14
FEB.											
08...	1015	48500	--	30	10	19	3.1	136	112	32	13
MAR.											
03...	1430	98600	26	22	7.2	14	2.9	104	85	21	9.1
07...	1030	100000	--	20	8.0	12	2.3	85	70	44	7.9
APR.											
04...	1015	107000	--	14	4.2	8.6	1.7	66	54	11	4.9
18...	1645	91200	21	19	5.9	12	2.2	85	70	17	7.3
MAY											
04...	1115	88900	--	14	4.2	7.1	1.4	66	54	12	4.3
JUNE											
08...	0745	201000	--	3.7	.6	1.8	.5	20	16	2.9	.1
09...	1330	208000	10	5.2	2.4	3.1	.8	31	25	6.5	1.0

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT.											
14...	.4	--	--	--	--	.66	--	.13	--	300	246
28...	.5	.40	.000	.05	.64	.64	.050	.11	.10	--	--
NOV.											
19...	.5	.42	.000	.10	.64	--	.070	.12	.090	--	--
DEC.											
09...	.5	.35	.000	.09	.00	.00	.060	.080	.080	--	--
JAN.											
13...	.4	.42	.000	.06	1.3	1.3	.060	.070	.040	--	--
20...	.4	--	--	--	--	.86	--	.14	--	244	222
FEB.											
08...	.3	.38	.010	.16	.87	.88	.060	.070	.070	--	--
MAR.											
03...	.4	--	--	--	--	.82	--	.17	--	170	158
07...	.3	.64	.000	.12	1.5	1.5	.060	.27	.080	--	--
APR.											
04...	.2	.26	.000	.07	.07	.07	.000	.11	.11	--	--
18...	1.2	--	--	--	--	.45	--	.11	--	198	129
MAY											
04...	.3	.14	.000	.05	.00	.00	.010	.040	.030	--	--
JUNE											
08...	.1	.15	.000	.01	.01	.01	.000	.080	.070	--	--
09...	.1	--	--	--	--	.04	--	.26	--	69	75

13343500 SNAKE RIVER NEAR CLARKSTON, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)
OCT.										
14...	130	0	391	7.8	14.5	5	--	--	--	--
28...	130	0	399	8.0	10.5	10	4	10.8	--	3
NOV.										
19...	140	0	416	8.1	8.5	10	2	11.7	2.8	3
DEC.										
09...	152	51	441	7.6	4.0	10	3	12.4	4.4	47
JAN.										
13...	140	12	373	7.9	2.0	10	5	13.7	2.2	35
20...	130	0	359	8.0	2.5	20	--	--	--	--
FEB.										
08...	120	8	341	6.8	3.5	20	6	13.7	1.4	2
MAR.										
03...	85	0	240	7.7	4.5	60	--	--	--	--
07...	83	13	196	6.4	5.0	20	50	13.1	2.3	--
APR.										
04...	52	0	141	6.8	7.0	20	10	12.5	2.5	6
18...	72	2	194	7.5	8.0	20	--	--	--	--
MAY										
04...	52	0	143	7.2	11.0	20	7	11.8	1.8	3
JUNE										
08...	12	--	350	6.6	10.5	20	10	11.6	1.5	29
09...	23	0	57	7.4	14.5	20	--	--	--	--

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
14...	--	--	--	--	--	--	--	--	--	--
28...	130	.5	<10	1	3	1	3	1	10	190
NOV.										
19...	120	--	--	--	--	2	--	5	--	20
DEC.										
09...	800	--	--	--	--	1	--	1	--	50
JAN.										
13...	65	2.0	1	0	<1	1	<1	2	10	40
20...	--	--	--	--	--	--	--	--	--	--
FEB.										
08...	49	--	--	--	--	2	--	2	--	20
MAR.										
03...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	1	--	2	--	40
APR.										
04...	52	5.5	--	0	--	1	--	0	--	30
18...	--	--	--	--	--	--	--	--	--	--
MAY										
04...	47	--	--	--	--	1	--	0	--	8
JUNE										
08...	730	--	--	--	--	1	--	2	--	10
09...	--	--	--	--	--	--	--	--	--	--

13353000 SNAKE RIVER BELOW ICE HARBOR DAM, WASH.

LOCATION.--Lat 46°15'02", long 118°52'55", in NW¼ sec.24, T.9 N., R.31 E., Franklin County, at Ice Harbor Dam, 1.1 miles upstream from gaging station, 10.5 miles east of Pasco and at mile 9.7.

DRAINAGE AREA.--108,500 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1969, October 1971 to September 1972 (discontinued). Prior to October 1963, record collected at site 8.2 miles downstream, published as 13353200, "near Pasco"; and October 1963 to September 1965, at site 7.5 miles downstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
05...	1145	33300	24	7.6	20	3.1	116	95	33	4.9	.14
19...	1050	32400	27	9.7	27	2.9	143	117	43	13	.14
NOV.											
16...	1435	42800	--	--	--	--	--	--	--	--	--
DEC.											
07...	0945	45000	35	12	30	4.1	173	142	45	15	.19
14...	1005	21100	35	13	28	3.6	173	142	41	17	.25
JAN.											
10...	1015	40900	37	12	25	4.4	175	144	40	15	.23
FEB.											
01...	0950	63000	27	9.3	16	3.5	125	103	28	12	--
08...	0930	64800	32	12	20	3.2	162	133	35	14	.60
22...	1115	59300	28	9.2	19	4.1	129	106	27	12	.37
MAR.											
14...	1015	165000	23	7.8	13	2.7	113	93	21	9.8	.64
APR.											
04...	1415	108000	16	5.0	12	2.1	83	68	15	5.4	.50
11...	1000	112000	17	5.6	13	2.4	89	73	17	7.0	.49
18...	1000	88500	18	6.1	12	2.2	98	80	17	6.4	.19
MAY											
10...	1650	131000	15	4.9	8.8	1.8	76	62	14	5.0	.90
23...	1530	181000	9.3	2.8	5.7	.9	35	29	7.6	2.2	.34
JUNE											
13...	0945	173000	7.2	1.5	2.6	2.9	29	24	4.9	1.1	.26
27...	0925	99800	10	3.0	6.9	1.3	49	40	9.4	2.0	.20
JULY											
11...	1520	43500	--	--	--	--	--	--	--	--	.17
25...	1225	43700	12	3.2	6.8	1.5	54	44	8.6	3.0	.18
AUG.											
08...	1110	31500	15	3.9	8.8	1.5	67	55	13	4.3	.46
22...	1110	26600	17	4.6	10	1.6	81	66	15	5.2	.25
SEP.											
12...	1105	27300	22	6.5	15	2.3	100	82	22	8.4	.23

13353000 SNAKE RIVER BELOW ICE HARBOR DAM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.											
05...	.010	.03	--	.020	.030	168	91	0	264	7.6	17.5
19...	.010	.06	.30	.030	.050	240	110	0	330	7.9	13.8
NOV.											
16...	--	--	--	--	--	--	--	--	405	8.0	9.0
DEC.											
07...	.010	.00	.60	.030	.060	266	140	0	395	8.1	6.8
14...	.040	.04	.58	.000	.22	242	140	0	410	8.1	5.6
JAN.											
10...	.020	.04	1.2	.040	.080	246	140	0	390	8.1	4.2
FEB.											
01...	.020	.74	1.7	.070	.23	230	110	3	300	7.7	1.5
08...	.010	.14	.14	.040	.13	96	130	0	350	7.9	1.7
22...	.010	.08	1.4	.090	.10	214	110	2	294	7.6	5.5
MAR.											
14...	.010	.29	.94	.060	.13	204	89	0	250	7.9	--
APR.											
04...	.040	.21	.56	.060	.11	162	60	0	199	7.8	9.7
11...	.020	.32	.54	.030	.15	168	65	0	193	7.9	9.2
18...	.050	.13	.47	.040	.11	180	70	0	201	7.9	9.9
MAY											
10...	.010	.13	.11	.010	.060	130	58	0	159	8.0	12.9
23...	.020	.08	.07	.010	.060	80	35	6	103	7.6	12.1
JUNE											
13...	.010	.07	.05	.020	.080	51	24	0	57	7.5	14.5
27...	.010	.03	.12	.020	.050	75	37	0	118	7.8	15.3
JULY											
11...	.000	.02	.16	.010	.030	--	--	--	128	7.9	--
25...	.000	.05	.09	.010	.020	--	43	0	119	7.8	20.1
AUG.											
08...	.010	.10	.24	.010	.030	116	53	0	149	--	22.3
22...	.010	.05	.11	.010	.020	128	61	0	190	7.9	21.8
SEP.											
12...	.010	.07	.93	.020	.030	156	82	0	236	8.0	20.5

13353000 SNAKE RIVER BELOW ICE HARBOR DAM, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
05...	19	3	8.2	120	3	--	10	2	.5	20
19...	14	4	8.6	100	5	--	3	0	.3	0
NOV.										
16...	18	2	11.0	40	--	--	--	--	--	--
DEC.										
07...	37	4	11.0	20	--	--	--	--	--	--
14...	22	7	11.4	>20	2	--	2	1	.5	10
JAN.										
10...	23	3	11.8	--	--	2	3	7	2.7	8
FEB.										
01...	111	50	14.3	1000	--	0	5	5	1.3	0
08...	24	10	14.6	500	--	0	1	2	.4	8
22...	164	75	14.1	1400	--	0	3	2	1.7	30
MAR.										
14...	57	30	12.2	240	--	0	320	48	1.7	20
APR.										
04...	62	22	12.6	>100	--	0	2	4	.3	7
11...	50	22	11.0	190	--	0	3	3	1.0	7
18...	42	15	11.5	50	--	0	1	1	.4	8
MAY										
10...	32	11	11.9	70	--	0	2	1	.2	20
23...	36	16	9.1	170	--	0	1	2	24	10
JUNE										
13...	33	19	11.3	1100	--	0	2	2	.5	20
27...	22	6	11.2	100	--	0	2	2	3.0	10
JULY										
11...	18	5	11.1	500	--	0	2	1	.7	0
25...	16	3	7.9	700	--	0	2	3	.6	0
AUG.										
08...	17	3	7.2	>100	--	0	1	1	.6	10
22...	17	2	7.0	400	--	0	2	2	1.0	0
SEP.										
12...	22	3	6.9	400	--	0	3	0	.7	0

14017500 TOUCHET RIVER AT TOUCHET, WASH.

LOCATION.--Lat 46°02'30", long 118°41'00", in NE¼SE¼ sec.33, T.7 N., R.33 E., Walla Walla County, at bridge on U.S. Highway 410, 0.5 mile upstream from mouth, and 0.6 mile west of Touchet.

DRAINAGE AREA.--About 750 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
04...	1450	110	--	--	--	--	--	--
20...	0943	100	16	6.5	10	3.3	96	79
26...	0955	--	14	5.3	7.2	3.6	85	70
NOV.								
09...	0940	68	11	4.7	6.3	2.4	71	58
30...	0925	360	7.8	3.0	3.7	2.3	45	37
DEC.								
14...	0930	650	10	5.2	4.7	3.2	56	46
28...	0945	330	9.7	4.6	7.4	3.1	54	44
JAN.								
12...	0925	350	11	4.5	5.6	3.0	62	51
FEB.								
08...	0925	--	7.6	3.4	9.0	6.1	53	43
22...	1420	970	8.3	3.1	4.0	2.4	45	37
MAR.								
14...	0950	2550	6.4	1.6	3.1	4.2	29	24
28...	0920	630	11	4.0	5.1	2.3	55	45
APR.								
11...	0930	560	9.4	3.5	4.9	1.8	50	41
25...	1035	--	9.9	3.9	4.3	2.8	58	48
MAY								
10...	1330	515	7.8	3.2	4.5	1.9	50	41
23...	1000	412	8.7	3.2	4.1	1.7	47	39
JUNE								
13...	1125	438	11	4.4	5.5	4.1	63	52
27...	1100	--	15	5.6	8.4	2.6	82	67
JULY								
11...	1300	7.0	20	7.7	14	4.1	109	89
25...	1045	6.6	24	9.5	15	3.7	135	111
AUG.								
08...	0930	--	42	18	31	5.8	259	212
22...	0910	--	22	8.8	14	4.0	131	107
SEP.								
12...	0940	--	21	9.2	17	3.6	133	109
27...	0930	11	24	8.6	16	2.6	134	110

14017500 TOUCHET RIVER AT TOUCHET, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
04...	--	--	--	--	--	--	--	--	--
20...	4.5	4.0	.14	.010	.07	.10	.060	.10	67
26...	--	4.4	--	--	--	--	--	--	57
NOV.									
09...	3.0	3.7	.10	.010	.07	.31	.060	.090	47
30...	2.0	2.3	4.3	.050	.82	.60	.35	.42	32
DEC.									
14...	3.5	5.9	.57	.050	.15	1.4	.010	.25	46
28...	5.2	1.9	--	--	.13	--	--	.12	43
JAN.									
12...	5.7	2.7	.34	.010	.11	1.9	.080	.30	46
FEB.									
08...	5.7	5.1	3.7	.030	.39	.82	.65	.75	33
22...	3.7	2.8	.87	.010	.48	1.0	.070	.40	33
MAR.									
14...	6.9	5.0	--	.020	--	.78	.10	.32	23
28...	5.2	2.9	.48	.010	.24	1.4	.10	.36	44
APR.									
11...	5.5	2.0	.37	.010	.15	1.1	.050	.17	38
25...	4.0	2.3	.29	.020	.05	.77	.030	.13	41
MAY									
10...	3.5	3.0	.41	.020	.13	.58	.020	.11	33
23...	2.7	2.0	.62	.040	.11	.58	.060	.18	35
JUNE									
13...	4.2	4.2	.37	.030	.11	.46	.060	.10	46
27...	4.9	6.3	.32	.020	.05	.36	.050	.090	60
JULY									
11...	7.1	15	.98	.000	.15	.23	.040	.11	82
25...	6.7	10	.48	.010	.09	.30	.080	.10	99
AUG.									
08...	13	14	1.3	.010	.37	.41	.020	.18	180
22...	6.7	9.3	.60	.010	.16	.20	.070	.13	91
SEP.									
12...	6.5	15	.70	.010	.15	.12	.080	.13	90
27...	16	4.9	.49	.010	.10	.03	.080	.11	95

14017500 TOUCHET RIVER AT TOUCHET, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
04...	--	197	7.8	8.3	36	25	8.7	100
20...	0	180	7.9	8.5	28	6	9.8	4500
26...	0	160	8.0	9.3	21	7	9.9	1500
NOV.								
09...	0	130	7.6	3.8	32	8	11.2	400
30...	0	88	7.7	5.8	156	90	11.5	14000
DEC.								
14...	0	115	7.5	2.8	53	40	10.6	10000
28...	0	112	7.3	.0	79	35	12.4	3000
JAN.								
12...	0	125	8.0	3.4	56	45	13.2	30000
FEB.								
08...	0	80	7.3	.2	650	1400	11.2	25000
22...	0	88	7.5	6.6	166	70	10.4	3000
MAR.								
14...	0	61	7.2	8.5	422	500	--	6000
28...	0	112	7.6	7.0	56	31	--	5000
APR.								
11...	0	107	7.8	8.6	46	26	10.2	1700
25...	0	108	7.7	11.0	41	16	11.4	2200
MAY								
10...	0	102	7.6	15.4	45	25	9.2	1000
23...	0	100	7.6	13.8	48	24	7.0	2500
JUNE								
13...	0	126	7.8	19.4	22	4	11.7	14000
27...	0	170	7.8	19.8	21	1	10.9	2000
JULY								
11...	0	255	7.7	21.0	27	5	10.2	1250
25...	0	288	7.8	29.9	24	5	6.9	4000
AUG.								
08...	0	507	7.8	23.8	36	6	7.7	25000
22...	0	266	7.6	21.4	26	4	6.0	8000
SEP.								
12...	0	277	7.7	15.4	26	8	7.6	4000
27...	0	188	7.7	10.5	24	6	6.1	4000

14105700 COLUMBIA RIVER NEAR THE DALLES, OREG.
(Irrigation network station)

LOCATION.--Lat 45°36'10", long 121°10'40", in NW¼ sec.3, T.1 N., R.13 E., Wasco County, at The Dalles Dam, 3.2 miles upstream from gaging station, and 2.6 miles northeast of The Dalles.

DRAINAGE AREA.--237,000 sq mi, approximately (upstream from gaging station).

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1972.
Water temperatures: December 1950 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT.									
16...	0930	6.3	23	5.1	6.3	1.1	86	71	14
JAN.									
05...	1400	11	25	6.9	9.1	1.8	102	84	21
FEB.									
18...	1040	14	26	6.6	7.8	1.7	95	78	18
MAR.									
31...	1315	15	17	5.0	6.3	1.6	76	62	13
MAY									
09...	1545	11	20	5.4	6.4	3.1	78	64	14
JULY									
05...	1603	7.1	15	3.6	2.9	.9	51	42	9.0
AUG.									
09...	1200	5.1	18	4.2	2.9	1.0	66	54	11
SEP.									
28...	1020	6.6	20	4.9	5.5	1.1	79	65	12

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.								
16...	2.5	.2	101	78	8	168	7.6	--
JAN.								
05...	4.8	.1	131	91	7	222	8.0	5.0
FEB.								
18...	5.9	.3	130	92	14	207	7.7	2.8
MAR.								
31...	2.3	.2	99	63	1	155	7.5	7.8
MAY								
09...	2.8	.2	102	72	8	165	7.7	12.5
JULY								
05...	1.0	.2	76	52	10	129	6.7	18.5
AUG.								
09...	4.5	.1	81	62	8	130	7.5	21.5
SEP.								
28...	2.6	.2	92	70	5	160	7.4	--

14222500 EAST FORK LEWIS RIVER NEAR HEISSON, WASH.

LOCATION.--Lat 45°50'13", long 122°27'54", in NE¼NW¼ sec.17, T.4 N., R.3 E., Clark County, temperature recorder at gaging station on right bank, 60 ft downstream from Basket Creek, 1.5 miles northeast of Heisson, 3.4 miles southwest of Yacolt, and at mile 20.2.

DRAINAGE AREA.--125 sq mi.

PERIOD OF RECORD.--Water temperatures: June 1950 to August 1972 (discontinued).

EXTREMES.--October 1971 to August 1972:
Water temperatures: Maximum, 21.5°C July 17, 30, 31; minimum, 1.0°C Jan. 27, 28, Feb. 2, 3.

Period of record:
Water temperatures: Maximum, 23.5°C Aug. 1952, July 31, 1965; minimum, freezing point Jan. 24, to Feb. 1, 1957, Jan. 11-14, 1963.

TEMPERATURE (°C) OF WATER, OCTOBER 1971 TO AUGUST 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	9.0	6.5	6.0	6.0	6.0	4.5	4.5	2.0	2.0	5.0	5.0
2	9.0	9.0	7.0	6.5	6.0	6.0	4.5	4.5	2.0	1.0	5.5	5.0
3	9.5	9.0	8.0	6.5	6.0	5.0	4.5	3.0	1.5	1.0	5.5	5.5
4	10.0	9.5	8.0	6.5	5.0	5.0	3.5	3.0	3.0	1.5	5.5	5.5
5	11.5	10.0	6.5	5.0	6.0	5.0	4.0	3.5	3.5	3.0	6.0	5.5
6	12.0	11.5	5.0	4.5	6.0	6.0	5.0	4.0	3.5	3.5	6.0	5.5
7	12.0	12.0	6.0	5.0	6.0	5.5	5.0	4.5	4.5	3.5	5.5	4.5
8	12.0	11.5	6.5	6.0	5.5	4.5	4.5	4.0	4.5	4.5	6.5	5.0
9	11.5	11.5	6.5	6.0	5.5	5.5	4.5	4.0	4.5	4.5	7.0	6.5
10	11.5	11.5	7.0	6.5	5.5	5.5	4.5	4.5	4.5	4.5	7.0	7.0
11	11.5	11.5	8.0	7.0	5.5	5.5	5.0	4.5	5.5	4.5	7.0	6.5
12	11.5	11.0	8.0	7.0	5.5	5.0	5.0	5.0	5.5	5.5	6.5	6.0
13	11.5	11.0	7.0	6.5	5.0	5.0	5.0	5.0	5.5	5.5	6.0	6.0
14	11.0	10.0	6.5	6.0	5.0	5.0	5.0	5.0	5.5	5.0	6.5	6.0
15	10.0	9.0	6.5	6.0	5.5	5.0	5.0	4.5	5.5	5.0	7.0	6.5
16	9.0	7.0	6.5	6.5	5.5	5.5	5.0	4.5	5.5	5.5	8.0	6.5
17	7.0	6.0	6.5	6.0	5.5	5.5	5.0	5.0	6.0	5.5	8.0	6.0
18	7.0	6.0	6.0	6.0	6.0	5.5	5.5	5.0	6.5	6.0	8.0	6.5
19	8.5	7.0	6.5	6.0	6.0	6.0	5.5	5.5	6.5	6.0	6.5	6.0
20	8.5	8.5	7.0	6.5	6.0	6.0	5.5	5.5	6.5	5.5	7.0	6.0
21	8.5	7.0	7.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	7.0	6.5
22	8.0	8.0	6.0	5.5	6.0	5.5	5.5	5.5	5.5	5.5	7.0	6.0
23	8.5	8.0	5.5	5.0	6.0	5.5	5.5	5.0	5.5	5.5	6.0	5.5
24	8.5	8.0	6.0	5.5	6.0	5.5	5.0	5.0	5.5	5.0	6.0	5.0
25	8.0	7.0	6.0	5.5	6.0	5.5	5.0	4.5	5.0	5.0	5.0	4.5
26	8.0	8.0	6.5	5.5	5.5	5.0	4.5	1.5	5.5	5.0	5.0	4.5
27	8.0	6.0	6.5	6.5	5.0	4.0	1.5	1.0	6.0	5.5	5.0	5.0
28	6.0	4.5	6.5	6.5	4.0	3.5	1.5	1.0	6.0	6.0	6.0	5.0
29	5.0	4.0	6.5	6.5	3.5	3.0	1.5	1.5	6.0	5.0	6.0	4.5
30	5.0	5.0	6.5	6.0	4.0	3.5	2.0	1.5	---	---	6.5	5.0
31	6.0	5.0	---	---	4.5	4.0	2.0	2.0	---	---	6.5	5.5
MONTH	12.0	4.0	8.0	4.5	6.0	3.0	5.5	1.0	6.5	1.0	8.0	4.5

14222500 EAST FORK LEWIS RIVER NEAR HEISSON, WASH.--Continued

TEMPERATURE (°C) OF WATER, OCTOBER 1971 TO AUGUST 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	6.0	9.0	5.5	13.5	11.0	17.0	15.5	20.5	19.0	---	---
2	6.0	5.0	10.5	8.0	14.0	11.5	18.0	16.0	19.5	18.5	---	---
3	6.5	5.0	10.5	8.0	14.0	12.0	19.0	17.0	20.0	17.0	---	---
4	7.0	6.0	11.0	8.5	14.0	11.5	20.0	18.0	---	---	---	---
5	8.0	7.0	11.0	8.5	15.0	13.5	20.0	19.5	---	---	---	---
6	7.0	5.5	10.5	9.0	15.0	14.0	19.5	18.5	---	---	---	---
7	5.5	5.0	9.5	8.5	15.0	14.0	18.5	16.5	---	---	---	---
8	5.5	5.0	8.5	8.0	15.5	14.0	17.0	16.0	---	---	---	---
9	6.0	5.0	8.5	8.0	15.5	14.	16.0	14.5	---	---	---	---
10	6.5	4.5	10.0	7.0	14.0	12.0	14.5	14.0	---	---	---	---
11	6.5	5.5	11.0	8.5	13.5	11.5	14.0	14.0	---	---	---	---
12	6.0	5.0	12.0	9.5	11.5	10.5	14.5	14.0	---	---	---	---
13	6.0	5.0	12.0	10.0	15.0	11.5	17.0	14.5	---	---	---	---
14	6.0	6.0	12.0	10.0	15.0	14.0	18.5	16.5	---	---	---	---
15	7.0	6.0	12.0	9.5	14.0	13.0	19.5	17.0	---	---	---	---
16	7.0	5.5	10.0	9.0	13.0	11.5	21.0	19.0	---	---	---	---
17	5.5	5.0	10.0	8.5	14.0	12.0	21.5	20.0	---	---	---	---
18	6.0	5.0	9.5	8.0	15.5	13.5	21.0	20.0	---	---	---	---
19	6.5	5.0	11.0	8.0	16.0	14.5	20.5	19.0	---	---	---	---
20	6.5	6.0	11.5	10.0	16.0	15.0	20.0	19.0	---	---	---	---
21	6.5	6.0	11.0	9.0	15.0	13.5	19.0	18.5	---	---	---	---
22	7.0	4.5	9.0	8.5	13.5	12.0	19.5	18.0	---	---	---	---
23	7.0	6.0	9.0	8.0	13.0	13.0	20.0	18.0	---	---	---	---
24	7.0	6.5	8.0	7.0	13.0	12.0	19.0	18.0	---	---	---	---
25	6.5	6.0	10.0	6.5	12.0	11.0	18.0	16.0	---	---	---	---
26	9.0	5.5	13.0	9.0	11.5	11.0	19.0	16.0	---	---	---	---
27	10.5	7.0	14.0	11.0	15.0	11.0	19.5	17.0	---	---	---	---
28	10.0	6.0	15.0	11.5	16.0	14.5	20.5	18.0	---	---	---	---
29	6.0	5.5	15.0	13.0	17.0	15.0	21.0	18.5	---	---	---	---
30	8.0	5.0	14.0	11.5	17.0	15.5	21.5	19.0	---	---	---	---
31	---	---	14.0	11.5	---	---	21.5	19.0	---	---	---	---
MONTH	10.5	4.5	15.0	5.5	17.0	10.5	21.5	14.0	---	---	---	---

14223500 KALAMA RIVER BELOW ITALIAN CREEK, NEAR KALAMA, WASH.

LOCATION.--Lat 46°02'42", long 122°48'51", in NE¼SW¼ sec.33, T.7 N., R.1 W., Cowlitz County, temperature recorder at gaging station on right bank 2.8 miles northeast of Kalama, 5.7 miles downstream from Italian Creek, and at mile 4.2.

DRAINAGE AREA.--198 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1970.
Water temperatures: October 1954 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 19.5°C July 17; minimum, 3.5°C Jan. 3, 4.

Period of record:
Water temperatures: Maximum, 20.5°C July 28, 1958; minimum, freezing point Nov. 19, 20, 1958.

REMARKS.--Recorder not operating Sept. 20-30; range in temperature 10.5°C to 13.0°C.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	9.0	6.0	5.5	6.5	6.0	5.0	5.0	5.5	5.5	5.0	5.0
2	9.5	9.0	6.0	6.0	6.0	6.0	5.0	5.0	5.5	5.0	5.0	5.0
3	9.5	8.5	6.5	6.0	6.0	6.0	5.0	3.5	5.0	5.0	5.0	5.0
4	9.5	9.0	7.0	6.5	6.0	5.5	4.0	3.5	5.0	5.0	5.0	5.0
5	11.0	9.5	6.5	5.0	6.0	5.5	4.0	4.0	5.0	5.0	5.5	5.0
6	11.0	10.0	5.0	5.0	6.0	6.0	5.0	4.0	5.0	5.0	5.5	5.0
7	11.0	10.0	6.0	5.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
8	10.5	9.5	6.5	6.0	5.0	4.5	5.0	4.0	5.0	5.0	5.5	5.0
9	10.5	9.5	6.5	6.5	5.0	5.0	4.5	4.0	5.0	5.0	5.5	5.5
10	10.5	10.0	7.0	6.5	5.0	5.0	4.5	4.5	5.0	5.0	5.5	5.5
11	10.5	10.0	8.0	7.0	5.0	5.0	5.0	4.5	5.0	5.0	5.5	5.5
12	10.0	9.5	8.0	8.0	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5
13	10.0	9.5	8.0	7.0	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.5
14	9.5	9.0	7.0	6.5	5.5	5.0	5.0	5.0	5.0	5.0	5.5	5.5
15	9.0	8.5	6.5	6.5	5.5	5.5	5.0	5.0	5.0	5.0	6.0	5.5
16	8.5	8.0	6.5	6.5	5.5	5.5	5.0	5.0	5.5	5.0	6.5	5.5
17	8.0	6.5	6.5	6.0	5.5	5.5	5.0	5.0	5.5	5.5	6.5	5.5
18	7.0	6.5	6.0	6.0	5.5	5.5	5.5	5.0	5.5	5.5	6.5	6.0
19	8.5	7.0	6.5	6.0	5.5	5.5	5.5	5.0	5.5	5.5	6.0	5.5
20	8.5	8.0	7.0	6.5	5.5	5.5	5.0	5.0	5.5	5.5	6.0	5.5
21	8.0	7.0	7.0	6.5	5.5	5.5	5.5	5.0	6.0	5.5	6.0	5.5
22	8.0	7.0	6.5	6.0	6.0	5.5	6.0	5.5	6.0	6.0	6.5	6.0
23	8.5	8.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	5.5	6.0	6.0
24	8.0	7.0	6.5	6.0	5.5	5.0	6.0	6.0	5.5	5.5	6.0	6.0
25	7.0	7.0	6.5	6.0	5.5	5.5	6.0	6.0	5.5	5.5	6.0	5.0
26	8.0	7.0	6.5	6.0	5.5	5.5	6.0	6.0	5.5	5.5	5.5	5.0
27	7.0	6.0	6.5	6.5	5.5	4.5	6.0	6.0	5.5	5.5	5.5	5.5
28	6.0	5.0	6.5	6.5	4.5	4.5	6.0	5.5	5.5	5.5	6.0	5.5
29	5.0	5.0	6.5	6.5	4.5	4.5	5.5	5.5	5.5	5.0	6.0	5.5
30	5.5	5.0	6.5	6.5	5.0	4.5	5.5	5.5	---	---	6.0	6.0
31	5.5	5.0	---	---	5.0	5.0	5.5	5.5	---	---	6.5	6.0
MONTH	11.0	5.0	8.0	5.0	6.5	4.5	6.0	3.5	6.0	5.0	6.5	5.0

14223500 KALAMA RIVER BELOW ITALIAN CREEK, NEAR KALAMA, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	6.0	8.0	7.0	11.0	10.5	16.5	13.5	16.5	15.0	16.0	13.0
2	6.5	6.0	9.0	8.0	11.5	11.0	17.0	13.5	16.0	14.5	16.0	13.5
3	6.0	6.0	9.0	9.0	11.5	11.5	17.0	14.0	18.0	14.5	16.5	13.5
4	6.5	6.0	9.5	9.0	11.5	11.5	18.5	14.5	18.5	15.0	17.0	15.0
5	7.0	6.5	9.5	9.0	12.0	11.5	18.0	14.5	18.5	15.5	15.5	14.0
6	7.0	6.5	9.5	8.5	12.0	12.0	16.5	14.0	18.5	15.5	14.0	13.0
7	6.5	5.5	8.5	8.5	12.0	12.0	15.0	14.0	19.0	16.0	13.5	13.0
8	5.5	5.5	8.5	8.5	13.0	12.0	14.5	13.0	18.5	16.5	13.5	12.0
9	6.0	5.5	8.5	8.5	13.0	12.0	13.0	11.5	18.5	16.0	13.0	11.5
10	6.5	6.0	9.0	8.5	12.0	11.5	12.0	11.0	18.5	15.5	13.5	11.0
11	6.5	6.5	9.5	9.0	11.5	11.0	11.5	11.0	18.0	14.0	14.0	10.5
12	6.5	6.0	10.0	9.5	11.0	10.5	12.0	11.5	17.0	13.5	14.0	11.0
13	6.5	6.0	10.0	9.5	11.5	10.5	14.5	11.5	16.0	13.5	14.0	11.0
14	6.5	6.5	10.0	9.5	11.5	11.5	17.0	14.0	15.0	13.5	14.5	11.5
15	6.5	6.5	10.0	9.0	11.5	11.5	18.5	14.5	14.0	13.5	15.0	11.5
16	6.5	6.5	9.0	9.0	11.5	11.0	19.0	14.5	14.5	13.0	14.5	13.0
17	6.5	6.0	9.0	9.0	11.5	11.0	19.5	15.5	13.5	12.0	15.0	11.5
18	6.0	6.0	9.0	8.5	13.0	11.5	18.0	15.5	16.0	12.0	13.0	10.5
19	6.0	6.0	9.0	8.5	13.5	13.0	17.0	14.0	15.5	[illegible]	11.0	10.0
20	6.5	6.0	9.5	9.0	13.5	13.5	17.0	14.0	15.0	14.0	---	---
21	6.5	6.5	9.5	9.0	13.5	12.0	16.0	13.5	14.5	14.0	---	---
22	6.5	6.0	9.0	8.5	12.0	11.5	16.5	13.5	15.0	13.0	---	---
23	7.0	6.5	9.0	8.5	11.5	11.5	17.0	14.0	16.5	14.0	---	---
24	7.0	7.0	8.5	8.5	11.5	11.0	16.0	14.0	16.5	14.5	---	---
25	7.0	6.5	9.0	8.5	11.0	11.0	14.5	13.5	16.5	[illegible]	---	---
26	7.0	6.5	10.0	9.0	11.0	11.0	16.5	14.0	17.0	14.5	---	---
27	9.0	7.0	10.5	10.0	11.5	11.0	17.0	14.0	18.0	15.0	---	---
28	9.0	8.0	11.0	10.5	13.5	11.5	18.0	14.5	18.5	15.0	---	---
29	8.0	6.5	11.0	10.5	14.0	13.5	18.0	14.5	19.0	15.0	---	---
30	7.0	6.5	10.5	10.5	16.5	13.5	17.0	14.5	17.0	14.0	---	---
31	---	---	11.0	10.5	---	---	17.0	14.5	16.0	13.0	---	---
MONTH	9.0	5.5	11.0	7.0	16.5	10.5	19.5	11.0	19.0	12.0	---	---

14231600 COWLITZ RIVER ABOVE CISPUS RIVER NEAR RANDLE, WASH.

LOCATION.--Lat 46°28'47", long 122°05'22", in SW¼ sec.32, T.12 N., R.6 E., Lewis County, at logging road bridge, 1.3 miles upstream from Cispus River, 6.5 miles southeast of Randle, and at mile 91.1

DRAINAGE AREA.--About 595 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
05...	1100	530	7.9	1.3	4.1	.7	38	31
27...	1045	2160	5.1	.6	2.5	1.0	28	23
NOV.								
03...	1040	1540	6.6	1.0	3.0	.6	32	26
30...	1100	2970	5.4	.9	2.6	.2	29	24
DEC.								
07...	1040	3390	6.2	.9	2.7	.4	29	24
21...	1030	2750	6.8	1.2	3.2	.9	33	27
JAN.								
04...	1045	1820	7.4	1.3	3.5	.9	36	30
18...	0950	2450	6.7	1.2	3.1	.5	35	29
FEB.								
02...	1045	1800	7.3	1.4	3.2	.9	36	30
15...	1020	4720	5.6	.9	2.5	.1	27	22
MAR.								
07...	1100	12500	4.6	.8	2.0	.7	25	21
21...	0955	6820	5.3	.7	1.9	.4	24	20
APR.								
04...	1030	4020	6.0	.9	2.5	.8	29	24
18...	1100	2710	6.9	.9	3.3	.8	31	25
MAY								
02...	1100	3060	5.8	.9	2.5	.5	29	24
16...	1040	9680	4.1	.6	1.5	.2	22	18
JUNE								
06...	1100	8900	3.5	.5	1.1	.3	20	16
20...	1045	5340	4.0	.6	1.5	.4	18	15
JULY								
06...	1045	7500	3.4	.5	1.3	.3	16	13
18...	1150	5790	3.5	.5	1.6	.7	11	9
AUG.								
01...	1040	2380	4.3	1.6	1.8	.9	19	15
15...	1050	1960	4.6	.7	2.3	.6	25	21
SEP.								
06...	0950	1300	5.7	1.1	3.3	1.1	27	22
19...	0945	1120	6.1	1.0	3.0	.7	29	24

14231600 COWLITZ RIVER ABOVE CISPUS RIVER NEAR RANDLE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
05...	3.5	1.9	.24	.010	.21	.01	.000	.020	25
27...	.0	1.5	.16	.010	.07	.08	.000	.040	15
NOV.									
03...	3.0	1.8	.12	.000	.10	.07	.010	.030	21
30...	.0	1.0	.12	.000	.06	.11	.000	.020	17
DEC.									
07...	1.8	.9	.08	.010	.00	.24	.010	.010	19
21...	3.8	1.5	.25	.000	.04	.18	.000	.010	22
JAN.									
04...	2.7	2.4	.12	.000	.04	.12	.000	.000	24
18...	1.8	1.4	.04	.000	.01	.16	.010	.010	22
FEB.									
02...	2.5	1.9	.22	.000	.06	.17	.010	.010	24
15...	1.8	2.1	.15	.000	.04	.25	.010	.030	18
MAR.									
07...	2.0	1.7	.18	.000	.14	.14	.010	.060	15
21...	1.3	.8	.05	.000	.05	.06	.010	.040	16
APR.									
04...	3.1	1.8	.31	.000	.08	.11	.010	.030	18
18...	2.3	1.4	.34	.010	.13	.06	.010	.020	21
MAY									
02...	2.5	1.7	.45	.010	.15	.07	.010	.010	18
16...	1.3	1.3	.12	.000	.03	.04	.000	.040	13
JUNE									
06...	2.6	1.4	.40	.000	.13	.06	.000	.050	11
20...	2.3	1.0	.45	.000	.08	.04	.000	.050	12
JULY									
06...	2.5	.4	.12	.010	.03	.02	.010	.050	11
18...	9.1	1.0	.30	.000	.10	.05	.010	.070	11
AUG.									
01...	4.2	1.0	.46	.020	.19	.03	.010	.070	17
15...	3.6	1.3	.15	.000	.03	.09	.010	.070	14
SEP.									
06...	4.6	1.9	.42	.010	.18	.02	.020	.10	19
19...	3.3	1.8	.22	.000	.08	.02	.010	.080	19

14231600 COWLITZ RIVER ABOVE CISPUS RIVER NEAR RANDLE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
05...	0	71	7.1	13.4	59	9	9.9	100
27...	0	47	7.0	5.3	19	3	12.1	650
NOV.								
03...	0	58	7.1	5.8	27	3	11.9	110
30...	0	51	7.4	6.0	7	3	11.8	50
DEC.								
07...	0	53	7.4	3.3	20	5	12.5	25
21...	0	61	7.4	3.8	21	4	11.9	130
JAN.								
04...	0	65	7.3	2.4	25	2	12.8	65
18...	0	63	7.1	3.4	11	2	12.1	78
FEB.								
02...	0	59	7.3	2.1	14	3	12.7	70
15...	0	48	7.4	3.8	12	7	12.4	220
MAR.								
07...	0	41	6.9	4.2	21	20	12.4	100
21...	0	43	7.1	6.0	14	8	11.7	50
APR.								
04...	0	49	7.1	6.5	11	5	11.5	50
18...	0	55	7.3	5.8	8	3	11.7	23
MAY								
02...	0	51	7.1	8.7	9	4	11.1	25
16...	0	37	7.1	6.5	18	18	11.6	250
JUNE								
06...	0	31	7.2	8.4	16	24	11.3	125
20...	0	38	7.2	9.5	11	8	10.8	200
JULY								
06...	0	28	7.1	10.0	18	22	10.5	400
18...	2	43	6.6	10.9	19	29	10.2	100
AUG.								
01...	3	44	7.2	13.3	23	27	9.3	220
15...	0	51	7.0	13.1	42	7	9.6	120
SEP.								
06...	0	58	7.1	11.8	21	16	9.6	100
19...	0	60	7.3	18.8	14	8	10.3	300

14232500 CISPUS RIVER NEAR RANDLE, WASH.

LOCATION.--Lat 46°26'50", long 121°51'46", in T.11 N., R.8 E. (unsurveyed), Lewis County, Gifford Pinchot National Forest, temperature recorder at gaging station on left bank, 60 ft upstream from bridge to Tower Rock ranger station, 4.1 miles downstream from North Fork, 8.0 miles southeast of Randle, and at mile 15.8.

DRAINAGE AREA.--321 sq mi.

PERIOD OF RECORD.--Water temperatures: May 1950 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 13.0°C during period Aug. 5 to Sept. 20; minimum, 1.0°C Jan. 3, 4, 26-30, Feb. 2, 3.

Period of record:
Water temperatures: Maximum, 16.5°C July 27-29, 1958; minimum, freezing point Jan. 20, 1954, and on several days during January and February in 1963.

REMARKS.--Recorder not operating Aug. 5 to Sept. 20; range in temperature 6.5°C to 13.0°C.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	7.0	5.0	5.0	4.5	4.0	3.0	3.0	[illegible]	[illegible]	[illegible]	3.5
2	9.0	7.0	5.0	5.0	4.5	4.0	3.0	2.0	1.5	1.0	3.5	3.5
3	9.5	7.0	5.0	5.0	4.5	4.0	2.0	1.0	2.0	1.0	3.5	3.5
4	10.0	8.0	5.0	4.5	4.0	3.5	2.0	1.0	3.0	2.0	3.5	3.5
5	10.0	8.5	4.5	3.5	3.5	3.5	2.0	1.5	3.5	3.0	4.0	3.5
6	10.0	8.5	3.5	3.5	3.5	3.5	3.0	2.0	3.5	3.5	4.0	4.0
7	10.0	8.5	4.5	3.5	3.5	3.0	3.0	3.0	4.0	3.5	4.0	3.5
8	10.0	8.0	4.5	4.5	3.0	2.0	3.5	3.0	4.0	4.0	4.5	3.5
9	10.0	8.0	5.0	4.5	2.0	2.0	3.5	2.0	4.0	3.5	4.5	4.5
10	10.0	8.5	5.0	5.0	2.0	2.0	2.0	2.0	3.5	3.5	4.5	4.5
11	9.5	9.0	5.5	5.0	3.0	2.0	2.0	2.0	4.0	3.5	4.5	4.5
12	9.5	8.5	5.5	5.5	3.0	2.0	3.0	2.0	4.0	4.0	4.5	4.5
13	9.0	8.5	5.5	5.5	2.0	2.0	3.0	3.0	4.0	4.0	4.5	4.5
14	8.5	8.0	5.5	5.0	2.0	2.0	4.0	3.0	4.0	3.5	4.5	4.0
15	8.0	6.5	5.0	5.0	2.0	2.0	3.5	3.5	3.5	3.5	4.5	4.5
16	6.5	5.5	5.0	5.0	3.0	2.0	3.5	3.5	3.5	3.5	5.0	4.5
17	6.0	5.0	5.0	4.5	3.5	3.0	3.5	3.5	3.5	3.5	5.0	4.0
18	6.5	5.5	4.5	4.5	3.5	3.5	3.5	3.5	4.0	3.5	4.5	4.5
19	6.5	6.5	5.0	4.5	3.5	3.5	3.5	3.0	4.0	4.0	4.5	4.5
20	6.5	6.0	5.5	5.0	3.5	3.5	3.0	2.0	4.0	4.0	5.0	4.5
21	6.0	5.5	5.0	4.5	3.5	2.0	3.5	2.0	4.0	4.0	5.0	4.5
22	6.5	6.0	4.5	4.0	3.5	2.0	3.5	3.5	4.0	4.0	5.0	4.5
23	6.5	6.5	4.0	4.0	3.5	3.5	3.5	3.5	4.5	4.0	4.5	4.0
24	7.0	6.5	4.5	4.0	3.5	3.5	3.5	3.5	4.5	4.0	4.5	4.0
25	6.5	6.0	4.5	4.5	3.5	3.5	3.5	3.0	4.0	3.5	4.0	3.5
26	6.5	5.5	4.5	4.5	3.5	2.0	3.0	1.0	4.0	3.5	3.5	3.5
27	5.5	5.0	4.5	4.5	2.0	1.5	1.0	1.0	4.0	3.5	3.5	[illegible]
28	5.0	4.0	4.5	4.5	1.5	1.5	1.0	1.0	4.0	4.0	5.0	3.5
29	4.0	3.5	4.5	4.5	2.0	1.5	1.0	1.0	4.0	3.5	5.0	4.0
30	4.5	4.0	4.5	4.5	3.0	2.0	2.0	1.0	---	---	5.5	4.0
31	5.0	4.5	---	---	3.0	3.0	2.0	2.0	---	---	5.0	4.5
MONTH	10.0	3.5	5.5	3.5	4.5	1.5	4.0	1.0	4.5	1.0	5.5	[illegible]

14232500 CISPUS RIVER NEAR RANDLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.0	5.0	6.0	4.0	8.0	6.0	10.5	8.5	11.0	9.5	---	---
2	5.0	4.0	6.5	4.5	8.0	6.0	11.0	9.0	11.5	9.5	---	---
3	5.0	4.0	8.0	5.0	8.5	6.0	11.0	9.0	11.5	9.0	---	---
4	5.5	5.0	8.0	5.0	8.0	6.0	11.0	9.0	11.5	9.5	---	---
5	5.5	5.0	6.5	5.0	8.5	6.5	11.5	9.5	---	---	---	---
6	5.0	4.0	6.0	5.0	8.0	6.5	11.0	9.5	---	---	---	---
7	4.0	3.5	5.5	5.0	8.0	6.5	10.5	9.0	---	---	---	---
8	4.0	3.5	5.0	5.0	8.5	6.5	10.5	9.0	---	---	---	---
9	4.5	3.5	5.0	5.0	8.0	6.5	9.0	8.5	---	---	---	---
10	4.5	3.5	6.5	4.5	7.0	6.5	9.0	8.5	---	---	---	---
11	4.5	4.0	6.5	5.0	6.5	6.0	9.0	8.5	---	---	---	---
12	4.0	3.5	7.0	5.0	6.5	6.0	9.0	9.0	---	---	---	---
13	4.5	3.5	7.0	5.0	9.0	6.0	10.0	9.0	---	---	---	---
14	4.5	4.0	6.5	5.0	9.0	7.0	11.0	9.0	---	---	---	---
15	6.0	4.5	6.0	5.0	8.5	7.0	11.5	9.5	---	---	---	---
16	5.0	3.5	5.5	5.0	8.5	7.0	12.0	10.0	---	---	---	---
17	4.0	3.5	5.5	5.0	8.0	6.5	11.5	10.0	---	---	---	---
18	5.5	4.0	6.0	4.5	9.5	7.0	11.0	9.5	---	---	---	---
19	5.0	3.5	7.0	4.5	9.5	7.0	11.0	9.5	---	---	---	---
20	5.0	4.5	6.5	5.5	9.0	7.0	10.0	9.0	---	---	---	---
21	5.0	4.5	6.0	5.0	8.5	7.0	11.0	9.0	---	---	8.0	6.5
22	6.0	3.5	6.0	5.5	8.5	7.0	11.5	9.0	---	---	7.0	6.5
23	6.0	4.5	6.0	5.0	8.0	7.0	11.5	9.5	---	---	6.5	6.0
24	6.0	5.0	6.0	5.0	7.0	7.0	11.5	9.5	---	---	6.5	6.0
25	5.5	4.5	7.0	5.0	7.0	7.0	11.0	9.0	---	---	6.5	5.5
26	7.0	4.5	8.5	5.5	8.0	7.0	11.0	9.0	---	---	5.5	5.5
27	8.0	5.0	8.5	6.0	10.5	8.0	11.0	9.0	---	---	6.0	5.0
28	6.0	4.0	8.5	6.0	10.5	8.5	11.5	9.0	---	---	5.5	5.0
29	4.5	4.0	8.0	6.0	10.5	9.0	11.5	9.5	---	---	7.0	5.5
30	5.0	4.0	8.0	6.0	10.5	9.0	11.0	9.5	---	---	8.0	6.0
31	---	---	8.0	6.0	---	---	12.0	9.5	---	---	---	---
MONTH	8.0	3.5	8.5	4.0	10.5	6.0	12.0	8.5	---	---	---	---

14233160 CISPUS RIVER BELOW WOODS CREEK, NEAR RANDLE, WASH.

LOCATION.--Lat 46°27'28", long 122°01'40", in NW¼ sec.11, T.11 N., R.6 E., Lewis County, at logging road bridge, 1.0 mile downstream from Woods Creek, 4.6 miles upstream from Cowlitz River, and 10 miles southeast of Randle.

DRAINAGE AREA.--About 400 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1971 to September 1972 (discontinued).

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT.								
05...	1125	627	.10	.000	.02	.00	.010	.020
26...	1115	1010	.09	.010	.01	.04	.010	.030
NOV.								
03...	1120	810	.09	.000	.03	.05	.010	.040
30...	1130	1730	--	.000	.09	.09	.010	.040
DEC.								
07...	1110	1570	.10	.000	.00	.09	.010	.010
21...	1100	1270	.16	.000	.03	.33	.030	.030
JAN.								
04...	1100	850	.11	.000	.04	.06	.020	.020
18...	1020	1200	.04	.000	.01	.08	.010	.020
FEB.								
02...	1115	1450	.21	.000	.05	.06	.020	.020
15...	1100	2260	.23	.000	.08	.24	.010	.030
MAR.								
07...	1130	5700	.14	.000	.09	.08	.010	.030
21...	1020	4800	.05	.000	.05	.08	.010	.020
APR.								
04...	1100	2280	.49	.010	--	.13	.010	.20
18...	1130	1780	.18	.010	.09	.02	.010	.020
MAY								
02...	1130	2300	.21	.010	.05	.06	.000	.030
16...	1100	6200	.10	.000	.01	.05	.010	.020
JUNE								
06...	1130	6000	.10	.000	.04	.03	.000	.020
20...	1110	3600	.32	.000	.06	.03	.000	.020
JULY								
06...	1115	3000	.21	.010	.03	.01	.020	.050
18...	1225	2330	.17	.000	.10	.04	.020	.040
AUG.								
01...	1120	2370	.23	.020	.06	.03	.020	.050
15...	1115	770	.14	.000	.02	.04	.010	.030
SEP.								
06...	1030	515	.15	.010	.06	.01	.030	.040
19...	1015	580	.06	.000	.04	.01	.020	.050

14233160 CISPUS RIVER BELOW WOODS CREEK, NEAR RANDLE, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG. C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL. PER 100 ML)
OCT.							
05...	65	7.2	10.6	12	5	11.2	100
26...	57	6.9	4.5	31	1	12.8	230
NOV.							
03...	72	7.3	5.3	25	2	12.5	100
30...	59	7.4	5.9	47	10	12.5	33
DEC.							
07...	52	7.5	2.6	16	6	13.5	25
21...	57	7.4	2.9	15	20	13.1	80
JAN.							
04...	61	7.4	1.9	17	1	14.0	40
19...	60	7.0	3.0	11	10	13.1	60
FEB.							
02...	73	7.4	1.2	12	2	14.0	25
15...	51	7.5	3.9	21	6	11.6	160
MAR.							
07...	42	7.0	3.7	20	9	13.1	47
21...	70	7.1	5.1	13	5	12.2	53
APR.							
04...	48	7.2	6.1	77	77	12.0	100
18...	50	7.5	5.3	3	2	12.4	>20
MAY							
02...	48	7.2	7.2	11	2	11.9	>20
16...	36	7.1	6.8	16	11	11.9	110
JUNE							
06...	35	7.2	7.7	13	6	11.3	55
20...	39	7.2	8.8	24	2	11.3	100
JULY							
06...	93	7.0	9.9	9	4	10.9	200
18...	47	7.2	11.4	12	6	11.4	125
AUG.							
01...	58	7.4	12.0	11	8	10.2	250
15...	58	6.8	11.3	17	2	10.5	220
SEP.							
06...	59	7.2	10.0	10	2	10.6	160
19...	60	7.5	17.8	10	2	11.1	[illegible]

14233400 COWLITZ RIVER NEAR RANDLE, WASH.

LOCATION.--Lat 46°28'13", long 122°05'51", in NE¼ sec.6, T.11 N., R.6 E., Lewis County, temperature recorder at gaging station 0.5 mile downstream from Cispus River, 8.1 miles southwest of Randle, and at mile 89.3.

DRAINAGE AREA.--1,030 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1959 to September 1970.
Water temperatures: November 1952 to August 1968, April 1969 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 16.0°C Aug. 27, 28; minimum, 1.0°C Jan. 27, 28.

Period of record:
Water temperatures: Maximum, 18.5°C July 11, 12, 1958, minimum (1952-68, 1969-72), freezing point Jan. 20, 1962.

REMARKS.--Prior to October 1968 data collected at site 1.0 miles downstream and published as "near Kosmos." Recorder not operating Feb. 29 to Mar. 23 (no range in temperature obtained) and May 30 to June 2 (range in temperature 6.5°C to 8.5°C).

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
1	9.5	8.5	6.0	5.0	5.5	5.0	4.5	4.0	3.0	2.0	---	---
2	10.5	9.0	5.5	5.0	5.0	4.5	4.5	3.5	2.0	1.5	---	---
3	11.0	9.5	6.0	5.5	5.0	4.5	3.5	2.0	3.0	2.0	--	---
4	12.0	10.5	6.5	5.5	4.5	4.0	3.0	2.0	4.0	2.0	--	---
5	12.0	11.0	5.5	4.0	4.0	3.5	3.5	3.0	5.0	4.0	---	---
6	12.0	11.5	4.5	4.0	4.5	4.0	4.5	3.5	5.0	4.5	---	---
7	12.0	10.5	5.5	4.5	4.5	3.5	4.5	4.0	5.0	4.5	---	---
8	11.5	10.0	6.0	5.0	3.5	3.0	4.0	4.0	5.0	5.0	---	---
9	11.0	10.0	6.0	5.5	3.0	3.0	4.0	3.5	5.0	4.0	---	---
10	11.0	10.0	6.5	6.0	3.5	3.0	3.5	2.0	4.5	4.0	---	---
11	11.0	10.0	7.0	6.5	4.0	3.5	3.0	2.0	5.0	4.0	---	---
12	10.5	9.5	7.0	6.5	4.0	3.0	3.5	3.0	5.0	4.5	---	---
13	10.0	9.0	6.5	6.0	3.5	3.0	4.0	3.0	5.0	4.5	---	---
14	9.0	8.5	6.0	6.0	3.0	3.0	4.5	4.0	4.5	3.5	---	---
15	8.5	8.0	6.0	5.5	4.0	3.0	4.5	4.0	4.5	3.5	---	---
16	8.0	6.5	6.0	5.5	4.5	4.0	4.5	4.0	5.0	4.5	---	---
17	6.5	6.0	5.5	5.5	4.5	4.5	5.0	4.5	5.0	4.0	---	---
18	7.0	6.0	6.0	5.0	5.0	4.5	4.5	3.5	5.5	4.5	---	---
19	8.0	6.5	6.5	6.0	5.0	4.5	4.5	4.0	5.5	5.0	---	---
20	7.0	6.5	7.0	6.5	5.0	4.0	4.0	3.5	5.0	5.0	---	---
21	7.0	6.0	6.5	5.0	4.0	3.5	4.0	3.0	5.0	4.5	---	---
22	8.0	6.5	5.0	4.5	4.5	3.5	4.5	4.0	5.0	5.0	---	---
23	8.0	7.0	5.0	4.5	4.5	4.0	4.5	4.0	5.5	4.5	---	---
24	8.0	7.0	5.5	5.0	5.0	4.0	4.0	3.5	5.0	5.0	5.5	4.5
25	8.0	7.0	5.0	5.0	5.0	4.5	4.0	3.5	5.0	4.5	4.5	4.0
26	8.0	6.0	5.0	5.0	4.5	3.5	3.5	1.5	5.0	4.5	4.0	3.5
27	6.0	4.5	5.5	5.0	3.5	2.0	1.5	1.0	5.0	4.5	4.0	4.0
28	4.5	4.0	5.5	5.0	2.0	2.0	2.0	1.0	5.0	4.0	5.5	4.0
29	4.0	3.0	5.5	5.0	3.0	2.0	2.0	2.0	4.0	---	5.5	4.5
30	4.5	3.5	6.0	5.5	4.0	3.0	2.0	2.0	---	---	6.0	5.0
31	5.0	4.0	---	---	4.5	4.0	3.0	2.0	---	---	5.5	5.5
MONTH	12.0	3.0	7.0	4.0	5.5	2.0	5.0	1.0	5.5	1.5	---	---

14233400 COWLITZ RIVER NEAR RANDLE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	5.5	8.0	6.0	---	---	10.0	9.0	13.0	12.0	14.0	11.0
2	5.5	5.0	9.5	7.0	---	---	10.5	9.5	13.5	12.0	14.0	11.0
3	5.5	4.5	9.5	8.0	9.0	7.0	10.5	9.5	14.0	12.0	14.5	11.5
4	6.0	5.5	9.0	8.0	9.0	6.5	10.5	9.5	14.0	13.0	14.5	12.0
5	6.0	5.5	9.0	8.0	9.0	7.0	10.5	10.0	14.0	13.0	14.0	12.0
6	5.5	4.5	8.5	6.5	9.0	6.5	11.0	9.5	14.0	13.0	12.0	11.0
7	4.5	4.0	8.0	6.5	8.5	6.5	10.0	9.0	14.5	13.0	11.5	10.0
8	4.0	3.5	7.0	6.0	8.5	6.5	10.0	9.0	14.0	13.5	11.5	10.5
9	5.0	3.5	6.5	6.0	8.5	6.0	9.0	8.5	14.5	13.0	11.0	10.0
10	5.0	4.0	8.5	6.0	7.0	6.0	8.5	8.5	14.0	13.0	11.5	9.5
11	5.0	4.5	8.5	6.5	6.5	6.0	9.0	8.5	13.5	12.0	12.0	10.0
12	5.5	5.0	9.0	7.0	6.5	6.0	9.0	8.5	13.5	12.0	12.0	10.5
13	5.5	5.5	9.0	7.0	9.5	6.5	9.5	8.0	13.5	11.5	13.0	11.0
14	7.0	5.5	9.0	6.5	9.5	7.0	10.5	8.5	13.0	11.5	13.0	11.0
15	7.0	5.0	8.5	6.0	9.0	8.0	11.0	10.0	12.0	10.5	13.0	11.0
16	5.5	4.5	8.0	6.0	8.5	8.0	11.5	10.5	11.0	10.0	12.0	10.5
17	6.5	5.0	8.0	6.0	9.0	8.0	11.5	10.5	11.0	10.5	12.0	10.0
18	6.5	5.5	7.0	5.5	10.0	8.5	11.5	10.5	13.0	10.0	10.0	9.0
19	6.5	6.0	8.5	6.0	10.0	9.0	11.0	10.5	13.5	11.0	9.0	8.5
20	6.5	6.0	8.5	7.0	10.0	8.5	11.0	10.0	14.0	11.5	9.5	9.0
21	7.0	5.0	8.0	6.0	9.0	8.5	11.0	9.5	14.0	12.0	9.5	8.0
22	7.0	6.5	7.0	5.5	9.0	8.5	11.5	10.5	14.5	12.0	8.0	7.0
23	7.0	6.5	7.0	5.5	9.0	7.0	11.5	11.0	14.0	11.0	8.0	7.0
24	8.0	6.5	6.5	5.5	7.0	7.0	11.5	11.0	14.5	11.5	8.0	7.0
25	7.0	6.5	7.0	5.5	8.0	7.0	12.0	11.0	15.0	12.0	8.0	7.0
26	8.5	6.5	9.0	7.0	8.0	7.0	12.0	11.0	15.5	12.0	7.0	6.5
27	9.5	8.0	9.0	8.0	9.5	8.0	13.0	11.5	16.0	13.0	7.0	7.0
28	8.5	5.5	9.0	7.0	10.0	9.0	13.0	11.5	16.0	13.5	8.0	6.5
29	5.5	5.0	9.0	6.5	10.5	9.5	13.5	12.0	15.5	13.0	8.5	7.0
30	6.5	5.0	---	---	10.5	9.0	13.0	12.0	14.5	12.0	9.5	8.5
31	---	---	---	---	---	---	13.5	11.5	14.0	11.5	---	---
MONTH	9.5	3.5	9.5	5.5	10.5	6.0	13.5	8.0	16.0	10.0	14.5	6.5

14234810 COWLITZ RIVER BELOW MOSSYROCK DAM, WASH.

LOCATION.--Lat 46°32'10", long 122°25'45", SE¼SE¼ sec.9, T.12 N., R.3 E., Lewis County, temperature recorder on left bank 0.2 mile downstream from Mossyrock Dam and 2.6 miles east from town of Mossyrock.

DRAINAGE AREA.--1,154 sq mi (at Mossyrock Dam).

PERIOD OF RECORD.--Water temperatures: July 1970 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 10.5°C Oct. 27, 28, Sept. 26, 27; minimum, 3.5°C Feb. 9, 10, 25.

Period of record:
Water temperatures: Maximum, 12.0°C Nov. 3, 4, 1970; minimum, 3.5°C Feb. 9, 10, 25, 1972.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	9.5	9.5	9.5	9.0	8.5	6.0	6.0	5.0	4.5	4.5	4.0
2	9.5	9.5	10.0	9.5	9.0	[illegible]	6.0	6.0	4.5	4.0	4.5	4.0
3	9.5	9.5	10.0	9.5	9.0	8.5	6.0	6.0	4.5	4.0	4.5	4.0
4	9.5	9.5	10.0	9.5	8.5	8.5	6.0	6.0	4.5	4.0	4.5	4.0
5	9.5	9.5	10.0	9.5	8.5	8.5	6.0	5.5	4.0	4.0	4.5	4.0
6	9.5	9.5	10.0	10.0	8.5	8.0	5.5	5.5	4.0	4.0	4.5	4.0
7	9.5	9.5	10.0	9.5	8.5	8.0	5.5	5.5	4.0	4.0	4.5	4.0
8	9.5	9.0	9.5	9.5	8.5	8.0	5.5	5.5	4.0	4.0	4.5	4.0
9	9.5	9.5	9.5	9.5	8.0	8.0	5.5	5.0	4.0	3.5	4.5	4.0
10	9.5	9.5	9.5	9.5	8.0	8.0	5.5	5.0	4.0	3.5	4.0	4.0
11	9.5	9.5	9.5	9.0	8.0	8.0	5.5	5.0	4.0	4.0	4.0	4.0
12	9.5	9.5	9.5	9.0	8.0	8.0	5.5	5.5	4.0	4.0	4.5	4.0
13	9.5	9.5	9.0	9.0	8.0	8.0	5.5	5.5	4.0	4.0	4.5	4.5
14	10.0	9.5	9.0	9.0	8.0	7.0	5.5	5.5	4.0	4.0	4.5	4.5
15	10.0	9.5	9.0	9.0	7.0	7.0	5.5	5.0	4.0	4.0	5.0	4.5
16	10.0	9.5	9.5	9.0	7.0	6.5	5.5	5.5	4.0	4.0	5.0	5.0
17	10.0	10.0	9.5	9.0	7.0	6.5	5.5	5.5	4.0	4.0	5.0	5.0
18	10.0	10.0	9.5	9.0	7.0	6.5	5.5	5.0	4.0	4.0	5.0	5.0
19	10.0	9.5	9.0	9.0	7.0	6.5	5.0	5.0	4.0	4.0	5.0	5.0
20	10.0	9.5	9.0	9.0	6.5	6.5	5.0	5.0	4.0	4.0	5.0	5.0
21	10.0	10.0	9.0	9.0	6.5	6.0	5.5	5.0	4.0	4.0	5.0	5.0
22	10.0	10.0	9.0	9.0	6.5	6.5	5.0	5.0	4.0	4.0	5.0	5.0
23	10.0	10.0	9.0	8.5	6.5	6.5	5.0	5.0	4.0	4.0	5.0	5.0
24	10.0	10.0	9.0	9.0	6.5	6.5	5.0	4.5	4.0	4.0	5.0	5.0
25	10.0	10.0	9.0	9.0	6.5	6.5	4.5	4.5	4.0	3.5	5.0	5.0
26	10.0	10.0	9.0	9.0	6.5	6.5	5.0	4.5	4.0	4.0	5.0	4.5
27	10.5	10.0	9.0	8.5	6.5	6.5	5.0	4.5	4.5	4.0	5.0	4.5
28	10.5	10.0	9.0	9.0	6.5	6.5	5.0	4.5	4.0	4.0	5.0	4.5
29	10.0	9.5	9.0	8.5	6.5	6.5	5.0	4.5	4.0	4.0	4.5	4.5
30	10.0	9.5	8.5	8.5	6.5	6.5	4.5	4.5	---	---	4.5	4.5
31	10.0	9.5	---	---	6.5	6.0	4.5	4.5	---	---	5.0	4.5
MONTH	10.5	9.0	10.0	8.5	9.0	6.0	6.0	4.5	5.0	3.5	5.0	4.0

14234810 COWLITZ RIVER BELOW MOSSYROCK DAM, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	4.5	6.0	5.5	8.0	6.5	8.0	7.0	9.0	9.0	9.5	9.5
2	4.5	4.5	6.0	5.5	7.0	6.0	8.0	7.0	9.0	8.5	9.5	9.0
3	5.5	4.5	6.0	5.5	8.0	6.0	8.0	8.0	9.0	8.5	9.5	9.0
4	5.0	5.0	6.0	5.5	8.5	8.0	8.0	8.0	9.0	9.0	9.5	9.0
5	5.0	5.0	6.0	5.5	8.5	8.0	8.0	8.0	9.0	9.0	9.5	9.5
6	5.0	4.5	5.5	5.5	8.5	6.0	8.5	8.0	9.0	8.5	9.5	9.5
7	5.0	5.0	5.5	5.5	8.5	6.0	8.0	8.0	9.0	8.5	9.5	9.5
8	5.5	5.0	6.0	5.5	8.5	6.5	8.0	8.0	9.0	9.0	9.5	9.5
9	5.0	5.0	6.0	5.5	8.5	8.5	8.0	8.0	9.0	9.0	9.5	9.5
10	5.0	5.0	6.0	5.5	8.5	8.0	8.5	8.0	9.0	9.0	9.5	9.0
11	5.0	4.5	6.0	5.5	8.5	8.5	8.0	8.0	9.0	9.0	9.5	9.0
12	5.0	4.5	6.0	5.5	8.5	8.5	8.0	8.0	9.0	9.0	10.0	9.5
13	4.5	4.5	6.0	5.5	8.5	8.5	8.0	8.0	9.0	9.0	10.0	9.5
14	4.5	4.5	6.0	5.5	9.0	8.0	8.5	8.0	9.0	9.0	10.0	9.5
15	5.0	4.5	6.5	6.0	8.5	6.5	8.5	8.0	9.0	9.0	10.0	9.5
16	5.0	5.0	8.0	6.0	8.0	7.0	8.5	8.0	9.0	9.0	9.5	9.5
17	5.0	4.5	6.0	6.0	8.0	6.5	8.5	8.5	9.5	9.0	10.0	9.5
18	5.0	4.5	6.5	6.0	7.0	7.0	8.5	8.5	9.5	9.0	10.0	9.5
19	5.0	5.0	6.5	6.0	7.0	6.5	9.0	8.5	9.0	9.0	10.0	9.5
20	5.0	5.0	6.0	6.0	7.0	7.0	8.5	8.5	9.0	9.0	10.0	9.5
21	5.0	5.0	6.0	6.0	8.0	7.0	9.0	8.5	9.0	9.0	10.0	9.5
22	5.5	5.0	6.5	6.0	7.0	7.0	9.0	8.5	9.5	9.0	10.0	9.5
23	6.0	5.5	6.5	6.0	7.0	7.0	9.0	8.5	9.5	9.0	10.0	9.5
24	6.0	5.5	7.0	6.0	7.0	7.0	9.0	8.5	9.5	9.0	10.0	10.0
25	5.5	5.5	8.0	7.0	7.0	6.5	9.0	8.5	9.5	9.0	10.0	10.0
26	5.5	5.0	8.0	6.0	8.0	7.0	9.0	8.5	9.5	9.0	10.5	10.0
27	6.0	5.5	6.0	6.0	8.0	6.5	9.0	8.5	9.5	9.0	10.5	10.0
28	6.0	5.5	6.5	6.0	7.0	7.0	9.0	8.5	9.5	9.0	10.0	10.0
29	6.0	5.5	6.5	6.5	8.0	7.0	9.0	8.5	9.5	9.0	10.0	9.5
30	5.5	5.5	8.5	6.5	8.0	8.0	9.0	8.5	9.5	9.5	10.0	9.5
31	---	---	8.5	6.5	---	---	9.0	8.5	9.5	9.0	---	---
MONTH	6.0	4.5	8.5	5.5	9.0	6.0	9.0	7.0	9.5	8.5	10.5	9.0

14236200 TILTON RIVER ABOVE BEAR CANYON CREEK, NEAR CINEBAR, WASH.

LOCATION.--Lat 46°35'44", long 122°27'30", in NE¼SW¼ sec.20, T.13 N., R.3 E., Lewis County, temperature recorder at gaging station on right bank, 0.9 mile upstream from Bear Canyon Creek, 3.5 miles southeast of Cinebar, and at mile 7.1.

DRAINAGE AREA.--141 sq mi.

PERIOD OF RECORD.--Water temperatures: May 1965 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 21.5°C during period Aug. 7-14; minimum, 0.5°C Feb. 2.

Period of record:
Water temperatures: Maximum, 24.5°C July 30, 1965; minimum, 0.5°C Feb. 2, 1972.

REMARKS.--Recorder stopped July 15-18, Aug. 7-14, and Aug. 31 to Sept. 30; range in temperature 12.0°C to 19.0°C, 14.0°C to 21.5°C, 8.0°C to 19.5°C, respectively.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.5	6.0	5.5	6.0	5.5	4.5	4.5	2.0	1.0	4.0	4.0
2	11.0	10.0	6.5	6.0	6.0	6.0	4.5	4.0	1.0	0.5	4.5	4.0
3	11.5	10.0	6.5	6.5	6.0	5.0	4.0	3.0	1.5	1.0	4.5	4.5
4	13.0	11.0	6.5	5.5	5.0	3.5	3.0	2.0	3.0	1.0	4.5	4.5
5	13.5	11.0	5.5	5.0	4.5	3.5	3.0	3.0	3.0	3.0	4.5	4.5
6	12.0	11.0	5.5	5.0	4.5	4.5	3.5	3.0	3.0	3.0	4.5	4.5
7	12.0	10.5	6.0	5.5	4.5	4.0	3.5	3.5	3.5	3.0	4.5	4.0
8	12.0	10.0	6.5	6.0	4.0	3.5	3.5	3.0	4.5	3.5	5.5	4.5
9	11.5	10.0	6.5	6.5	4.0	4.0	3.0	3.0	4.0	3.5	5.5	5.0
10	11.5	10.5	6.5	6.5	4.5	4.0	3.0	1.5	4.5	3.5	5.5	5.0
11	11.0	11.0	7.0	6.5	4.5	4.5	3.0	1.5	4.5	4.0	5.0	5.0
12	11.0	9.5	7.0	6.5	4.5	3.5	3.0	3.0	4.5	4.5	5.0	5.0
13	11.0	10.0	6.5	6.5	4.0	3.5	3.5	3.0	4.5	4.5	5.0	5.0
14	10.0	9.5	6.5	6.5	4.0	3.5	4.0	3.5	4.5	4.0	5.5	5.0
15	9.5	8.5	6.5	6.5	4.5	3.5	4.0	4.0	4.5	4.5	5.5	5.5
16	9.0	7.0	6.5	6.5	4.5	4.5	4.0	4.0	4.5	4.5	5.5	5.0
17	8.5	7.0	6.5	6.0	4.5	4.5	4.0	3.0	4.5	4.5	5.5	5.0
18	8.5	8.0	6.5	6.0	4.5	4.5	3.5	3.0	5.0	4.5	5.5	5.0
19	8.5	7.0	6.5	6.5	4.5	4.5	3.5	3.0	5.0	4.5	5.5	5.0
20	8.0	7.0	7.0	6.5	4.5	3.5	3.5	3.0	4.5	4.5	5.5	5.0
21	8.0	7.0	7.0	6.5	4.0	3.5	4.0	3.5	5.0	4.5	5.5	5.0
22	8.0	8.0	6.5	6.0	4.5	4.0	4.0	4.0	5.0	4.5	5.5	5.0
23	8.0	8.0	6.0	5.5	4.5	4.5	4.0	4.0	5.0	4.5	5.5	4.5
24	8.0	8.0	6.0	6.0	4.5	4.5	4.0	3.5	4.5	4.5	5.0	4.5
25	8.0	8.0	6.0	5.5	4.5	4.5	3.5	3.0	4.5	4.5	4.5	3.5
26	8.0	6.5	6.0	6.0	4.5	4.5	3.0	1.5	4.5	4.5	4.5	4.0
27	6.5	6.0	6.0	6.0	4.5	3.5	1.5	1.5	5.0	4.5	4.5	4.5
28	6.0	5.5	6.0	6.0	3.5	3.5	1.5	1.5	4.5	4.5	5.5	4.5
29	5.5	5.0	6.0	6.0	4.0	3.5	1.5	1.5	4.5	3.5	6.5	4.5
30	5.5	5.5	6.0	6.0	4.5	4.0	1.5	1.5	---	---	5.5	4.5
31	6.0	5.5	---	---	4.5	4.5	2.0	1.5	---	---	5.5	4.5
MONTH	13.5	5.0	7.0	5.0	6.0	3.5	4.5	1.5	5.0	0.5	6.5	3.5

14236200 TILTON RIVER ABOVE BEAR CANYON CREEK, NEAR CINEBAR, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.5	4.5	7.0	5.0	12.0	9.0	16.5	11.5	20.0	14.0	---	---
2	5.5	4.5	8.5	6.0	13.5	9.0	17.0	12.0	16.5	14.5	---	---
3	5.5	4.5	9.0	6.0	13.5	10.0	18.0	12.0	17.0	14.0	---	---
4	5.5	5.5	9.0	6.0	13.5	10.0	18.5	13.0	20.0	14.0	---	---
5	5.5	5.5	9.0	6.5	13.5	10.5	18.0	13.5	20.5	14.5	---	---
6	5.5	4.5	6.5	6.0	14.0	11.0	16.0	13.5	20.5	14.5	---	---
7	4.5	4.0	7.0	6.0	14.0	11.5	14.5	13.0	---	---	---	---
8	4.5	4.0	6.5	6.0	14.5	11.0	14.5	13.0	---	---	---	---
9	5.5	4.0	6.5	6.0	13.5	11.5	13.5	12.0	---	---	---	---
10	5.0	4.0	9.0	5.5	13.5	10.5	12.0	11.0	---	---	---	---
11	5.0	4.5	9.5	6.5	12.0	10.5	13.0	12.0	---	---	---	---
12	5.0	4.0	10.0	6.5	10.5	10.0	13.0	12.0	---	---	---	---
13	5.5	4.0	9.5	6.5	14.5	10.5	13.5	11.5	---	---	---	---
14	5.5	5.0	9.0	6.5	13.5	11.5	16.0	11.5	---	---	---	---
15	6.0	5.0	8.0	6.5	11.5	11.5	---	---	14.5	13.5	---	---
16	5.0	4.5	7.0	6.5	13.0	11.0	---	---	15.5	13.0	---	---
17	5.0	4.0	8.0	7.0	14.0	10.5	---	---	14.5	13.5	---	---
18	5.0	4.5	8.5	6.5	16.0	11.5	---	---	17.0	12.0	---	---
19	5.0	4.0	10.5	6.5	16.5	11.0	15.0	13.5	16.5	13.5	---	---
20	5.0	4.5	10.0	8.5	14.5	12.0	17.0	13.0	16.5	14.5	---	---
21	5.0	4.5	9.5	8.0	12.0	11.0	18.0	13.0	16.0	13.5	---	---
22	6.0	4.0	8.5	8.0	11.5	11.0	18.0	13.5	15.5	14.0	---	---
23	5.5	4.5	8.0	6.5	11.0	10.5	18.5	13.0	19.0	13.5	---	---
24	5.5	5.5	8.0	7.0	11.0	10.5	18.5	14.0	19.0	14.0	---	---
25	6.0	5.0	10.0	6.5	10.5	10.0	15.5	14.0	19.5	13.5	---	---
26	8.0	5.0	11.5	8.0	10.5	10.0	18.5	14.0	20.0	14.0	---	---
27	8.5	5.5	12.0	9.0	13.5	10.0	18.5	14.0	20.0	14.0	---	---
28	7.0	5.0	13.0	9.5	15.5	11.0	18.5	14.0	20.0	14.5	---	---
29	6.0	5.0	11.5	10.0	14.5	12.0	19.5	14.0	19.5	14.5	---	---
30	6.0	5.0	13.0	9.0	16.5	12.0	20.0	14.0	19.0	13.5	---	---
31	---	---	12.0	9.5	---	---	19.0	14.0	---	---	---	---
MONTH	8.5	4.0	13.0	5.0	16.5	9.0	20.0	11.0	---	---	---	---

14238000 COWLITZ RIVER BELOW MAYFIELD DAM, WASH.

LOCATION.--Lat 46°30'38", long 122°36'54", in SE¼NE¼ sec.24, T.12 N., R.1 E., Lewis County, temperature recorder at gaging station on right bank, 1.4 miles downstream from Mayfield Dam, 1.5 miles upstream from Mill Creek, 2.1 miles downstream from Winston Creek, and at mile 50.6.

DRAINAGE AREA.--1,400 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1950 to September 1972.

EXTREMES.--1971-72:
Water temperatures: Maximum, 13.0°C Aug. 30, 31; minimum, 3.5°C Jan. 26-31, Feb. 2.

Period of record:
Water temperatures: Maximum, 21.0°C July 28, 29, 1958; minimum, 0.5°C Jan. 28 to Feb. 2, 1956.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	10.0	9.5	9.0	8.5	8.5	5.5	5.5	4.0	4.0	5.0	5.0
2	10.5	10.0	9.0	9.0	8.5	8.5	5.5	5.5	4.0	3.5	5.0	5.0
3	10.5	10.0	9.0	9.0	8.5	8.5	5.5	5.5	4.0	4.0	5.0	5.0
4	10.5	10.0	9.0	8.5	8.5	8.0	5.5	5.5	4.0	4.0	5.0	5.0
5	10.0	10.0	9.0	9.0	8.0	8.0	5.5	5.5	4.0	4.0	5.0	5.0
6	10.5	10.0	9.0	9.0	8.0	8.0	5.5	5.5	4.0	4.0	5.0	5.0
7	10.5	10.0	9.0	9.0	8.0	8.0	5.5	5.5	4.5	4.0	5.0	5.0
8	10.5	10.0	9.0	9.0	8.0	7.0	5.5	5.5	4.5	4.5	5.0	5.0
9	10.5	10.0	9.0	9.0	7.0	7.0	5.5	5.5	4.5	4.5	5.0	5.0
10	10.5	10.5	9.0	9.0	7.0	7.0	5.5	5.0	4.5	4.5	5.0	5.0
11	10.5	10.5	9.0	9.0	7.0	7.0	5.0	5.0	4.5	4.5	5.0	4.5
12	10.5	10.0	9.0	9.0	7.0	6.5	5.0	5.0	4.5	4.5	4.5	4.5
13	10.5	10.0	9.0	9.0	6.5	6.5	5.0	5.0	4.5	4.5	4.5	4.5
14	10.0	10.0	9.0	9.0	6.5	6.5	5.0	4.5	4.5	4.5	4.5	4.5
15	10.5	10.0	9.0	9.0	6.5	6.5	4.5	4.5	4.5	4.5	4.5	4.5
16	10.5	10.5	9.0	9.0	6.5	6.5	4.5	4.5	4.5	4.5	4.5	4.5
17	10.5	10.5	9.0	9.0	6.5	6.5	4.5	4.5	4.5	4.5	5.0	4.5
18	10.5	10.5	9.0	9.0	6.5	6.5	4.5	4.0	4.5	4.5	5.0	5.0
19	10.5	10.0	9.0	9.0	6.5	6.5	4.0	4.0	4.5	4.5	5.0	5.0
20	10.0	10.0	9.0	9.0	6.5	6.5	4.0	4.0	5.0	4.5	5.0	5.0
21	10.0	10.0	9.0	9.0	6.5	6.5	4.0	4.0	5.0	5.0	5.0	5.0
22	10.0	10.0	9.0	9.0	6.5	6.5	4.0	4.0	5.0	5.0	5.0	5.0
23	10.0	10.0	9.0	9.0	6.5	6.5	4.0	4.0	5.0	5.0	5.0	5.0
24	10.0	10.0	9.0	9.0	6.5	5.5	4.0	4.0	5.0	5.0	5.0	5.0
25	10.0	10.0	9.0	8.5	5.5	5.5	4.0	4.0	5.0	5.0	5.0	5.0
26	10.0	9.5	8.5	8.5	5.5	5.5	4.0	3.5	5.0	5.0	5.0	5.0
27	9.5	9.5	8.5	8.5	5.5	5.5	3.5	3.5	5.0	5.0	5.0	5.0
28	9.5	9.5	8.5	8.5	5.5	5.5	3.5	3.5	5.0	5.0	5.0	5.0
29	9.5	9.5	8.5	8.5	5.5	5.5	3.5	3.5	5.0	5.0	5.0	5.0
30	9.5	9.5	8.5	8.5	5.5	5.5	3.5	3.5	---	---	5.0	5.0
31	9.5	9.5	---	---	5.5	5.5	4.0	3.5	---	---	5.0	5.0
MONTH	10.5	9.5	9.5	8.5	8.5	5.5	5.5	3.5	5.0	3.5	5.0	4.5

14238000 COWLITZ RIVER BELOW MAYFIELD DAM, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.0	5.0	6.5	6.5	10.0	8.0	11.0	9.5	12.0	10.5	12.0	12.0
2	5.0	5.0	6.5	6.5	9.5	8.5	11.0	9.5	11.0	10.0	12.0	11.5
3	5.0	5.0	7.0	6.5	9.0	8.0	11.5	10.0	10.5	10.0	12.0	11.5
4	5.0	5.0	8.0	6.5	8.0	8.0	10.5	9.5	11.0	10.0	11.5	11.0
5	5.0	5.0	8.0	6.5	8.5	8.0	9.5	9.0	11.0	10.5	11.5	10.5
6	5.0	5.0	6.5	6.5	8.5	8.5	9.0	9.0	11.5	10.5	11.0	10.5
7	5.5	5.0	7.0	6.5	8.5	8.5	9.5	9.0	11.0	11.0	11.0	11.0
8	5.5	5.5	7.0	6.5	9.0	8.5	9.5	9.0	11.0	11.0	11.0	10.5
9	5.5	5.5	7.0	6.5	9.0	9.0	9.0	9.0	11.0	10.0	11.0	10.5
10	5.5	5.5	7.0	7.0	9.0	9.0	10.0	9.0	11.0	10.0	11.0	11.0
11	5.5	5.5	8.0	7.0	9.0	9.0	10.0	9.5	11.0	10.0	11.0	11.0
12	5.5	5.5	8.5	8.0	9.0	9.0	10.0	9.5	11.0	11.0	11.0	11.0
13	5.5	5.5	8.0	7.0	9.0	9.0	10.0	9.0	11.5	11.0	12.0	11.0
14	5.5	5.5	7.0	6.5	9.0	9.0	10.0	9.0	11.0	10.5	12.0	11.0
15	5.5	5.5	7.0	7.0	9.0	9.0	10.0	9.5	11.0	10.5	11.5	11.0
16	5.5	5.5	7.0	7.0	9.0	9.0	10.5	9.5	11.5	11.0	12.0	11.0
17	5.5	5.5	7.0	7.0	9.0	9.0	10.5	9.5	11.0	10.5	12.0	11.0
18	5.5	5.5	7.0	7.0	9.5	9.0	10.0	9.5	11.5	10.5	11.0	10.5
19	5.5	5.5	8.0	7.0	9.5	8.5	11.5	9.5	11.0	10.5	10.5	10.0
20	5.5	5.5	8.0	6.5	9.0	8.5	11.5	10.0	10.5	10.5	10.5	10.0
21	5.5	5.5	7.0	6.5	9.0	8.5	11.0	10.0	11.5	10.5	10.5	10.0
22	5.5	5.5	7.0	7.0	8.5	8.5	10.0	9.5	11.0	11.0	10.0	10.0
23	5.5	5.5	7.0	7.0	8.5	8.5	10.0	9.5	11.0	11.0	10.5	10.0
24	5.5	5.5	7.0	7.0	8.5	8.5	10.0	9.5	11.0	11.0	10.5	10.5
25	5.5	5.5	7.0	7.0	8.5	8.0	10.0	9.5	11.0	10.5	10.5	10.5
26	5.5	5.5	7.0	7.0	8.5	8.0	10.5	10.0	11.5	11.0	10.5	10.5
27	5.5	5.5	8.0	7.0	8.5	8.5	10.5	10.0	11.5	11.0	10.5	10.5
28	6.0	5.5	8.0	8.0	8.5	8.5	10.5	10.0	11.5	11.0	10.5	10.5
29	6.0	6.0	8.0	8.0	8.5	8.5	11.0	10.0	11.5	11.0	10.5	10.0
30	6.5	6.0	8.0	7.0	10.5	8.5	11.0	11.0	13.0	11.0	10.0	10.0
31	---	---	8.5	7.0	---	---	11.0	10.5	13.0	11.5	---	---
MONTH	6.5	5.0	8.5	6.5	10.5	8.0	11.5	9.0	13.0	10.0	12.0	10.0

14242500 TOUTLE RIVER NEAR SILVER LAKE, WASH.

LOCATION.--Lat 46°20'11", long 122°43'27", in NW¼SE¼ sec.19, T.10 N., R.1 E., Cowlitz County, temperature recorder at gaging station on right bank just downstream from bridge on State Highway 504, 0.8 mile downstream from confluence of North and South Forks, 4.9 miles northeast of Silver Lake, and at mile 16.4.

DRAINAGE AREA.--474 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1950 to September 1962, October 1963 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 20.0 °C Aug. 7, 9; minimum, 4.0°C Dec. 7, 8, 12-20, 28-31.

Period of record:
Water temperatures: Maximum, 22.0°C Aug. 4, 1952, Aug. 15, 1967; minimum (1950-60, 1961-62, 1963-72), freezing point Jan. 4, 5, 1959.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.5	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.5	5.0	5.0
2	11.0	9.5	6.0	5.5	5.0	5.0	5.0	5.0	4.5	4.5	5.0	5.0
3	11.5	9.5	6.0	5.5	5.0	4.5	5.0	4.5	4.5	4.5	5.0	5.0
4	12.0	10.0	6.5	6.0	4.5	4.5	4.5	4.5	4.5	4.5	5.0	5.0
5	11.5	11.0	6.0	5.5	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.0
6	11.5	11.0	5.5	5.5	4.5	4.5	5.0	4.5	4.5	4.5	5.5	5.0
7	11.0	10.5	6.0	5.5	4.5	4.0	5.0	4.5	4.5	4.5	5.0	5.0
8	11.0	10.0	6.0	5.5	4.5	4.0	4.5	4.5	4.5	4.5	5.5	5.0
9	11.0	10.0	6.0	5.5	4.5	4.5	4.5	4.5	4.5	4.5	5.5	5.5
10	11.0	11.0	6.0	5.5	4.5	4.5	4.5	4.5	4.5	[illegible]	5.5	5.5
11	11.0	10.0	6.5	6.0	4.5	4.5	5.0	4.5	5.0	[illegible]	6.0	5.5
12	11.0	10.0	6.5	6.0	4.5	4.0	5.5	5.0	5.0	5.0	6.0	5.5
13	10.0	9.5	6.0	6.0	4.0	4.0	5.5	5.0	5.0	5.0	6.0	5.5
14	9.5	9.0	6.0	6.0	4.0	4.0	5.5	5.0	5.0	4.5	6.0	5.5
15	9.0	8.0	6.0	6.0	4.0	4.0	5.5	5.0	5.0	4.5	6.5	5.5
16	8.0	6.5	6.0	6.0	4.0	4.0	5.5	5.0	5.5	5.0	6.5	5.5
17	6.5	6.0	6.0	5.0	4.0	4.0	5.5	5.0	5.5	5.0	6.5	5.5
18	7.0	6.0	5.0	5.0	4.0	4.0	5.5	5.0	5.5	5.0	6.5	6.0
19	7.0	7.0	6.0	5.0	4.0	4.0	5.5	5.0	5.5	5.0	6.0	5.5
20	7.0	6.5	6.0	6.0	4.5	4.0	5.0	5.0	5.5	5.0	6.0	5.5
21	6.5	6.5	6.0	5.5	4.5	4.5	5.0	5.0	5.5	5.0	6.0	5.5
22	7.0	6.5	5.5	5.0	4.5	4.5	5.0	5.0	5.5	5.0	6.0	6.0
23	7.0	6.5	5.0	5.0	4.5	4.5	5.0	4.5	5.0	5.0	6.0	5.5
24	8.0	6.5	5.5	5.0	4.5	4.5	4.5	4.5	5.0	5.0	6.0	5.5
25	6.5	6.5	5.0	5.0	4.5	4.5	4.5	4.5	5.0	5.0	5.5	5.5
26	7.0	6.5	5.5	5.0	4.5	4.5	4.5	4.5	5.0	5.0	[illegible]	5.5
27	6.5	6.0	5.5	5.0	4.5	4.5	4.5	4.5	6.0	5.0	[illegible]	5.5
28	6.0	5.5	5.0	5.0	4.5	4.0	4.5	4.5	6.0	[illegible]	[illegible]	[illegible]
29	5.5	5.5	5.0	5.0	4.0	4.0	4.5	4.5	5.5	[illegible]	[illegible]	5.5
30	5.5	5.5	5.5	5.0	4.0	4.0	4.5	4.5	---	---	[illegible]	[illegible]
31	5.5	5.5	---	---	4.5	4.0	4.5	4.5	---	---	[illegible]	6.0
MONTH	12.0	5.5	6.5	5.0	5.5	4.0	5.5	4.5	6.0	[illegible]	[illegible]	[illegible]

14242500 TOUTLE RIVER NEAR SILVER LAKE, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	6.0	8.5	6.0	11.0	8.5	15.0	12.0	18.0	16.0	16.5	14.5
2	6.5	6.0	10.0	7.0	11.5	8.5	16.0	13.0	16.5	15.5	17.0	14.5
3	6.5	5.5	10.0	8.0	12.0	9.5	16.0	13.0	18.0	15.0	18.0	15.0
4	6.5	6.0	10.5	8.0	11.5	9.5	16.5	13.5	19.0	16.0	17.0	15.5
5	7.0	6.5	10.0	8.0	12.0	9.5	16.5	14.5	19.0	16.0	16.5	15.0
6	6.5	6.0	9.5	8.0	12.0	9.5	16.0	13.5	19.5	16.0	15.0	14.0
7	6.0	5.5	8.0	7.0	11.5	9.5	15.0	13.0	20.0	16.5	15.0	14.0
8	5.5	5.5	7.0	7.0	12.0	9.5	14.0	13.0	19.5	17.0	14.5	13.5
9	6.0	5.5	7.0	6.5	11.5	9.5	14.0	12.0	20.0	17.0	14.0	13.5
10	6.0	5.5	9.0	6.5	11.0	9.0	13.0	11.5	18.5	15.0	14.5	13.0
11	6.0	5.5	10.0	7.0	10.5	9.0	13.0	12.0	17.0	15.0	14.5	12.0
12	6.0	5.5	10.5	8.0	10.0	9.0	13.0	13.0	16.0	14.0	14.5	12.0
13	6.0	5.5	10.5	8.0	13.5	9.5	15.0	13.0	16.5	14.0	15.5	13.0
14	6.0	5.5	10.0	7.0	13.5	11.0	16.5	14.0	16.0	14.0	15.5	13.5
15	6.5	6.0	9.5	7.0	11.0	10.5	17.0	14.0	14.5	14.0	15.5	13.5
16	6.5	6.0	7.0	7.0	11.5	10.0	18.0	15.0	14.5	13.5	14.5	13.5
17	6.0	5.5	7.0	7.0	12.0	10.0	18.5	15.0	14.5	14.0	14.0	13.0
18	6.0	5.5	8.5	6.5	14.5	11.0	18.0	15.0	15.5	13.0	13.5	11.5
19	6.0	5.5	10.0	7.0	14.5	11.0	18.0	14.5	16.0	14.5	12.0	11.5
20	6.0	6.0	10.0	8.5	14.0	11.5	18.0	15.0	16.0	15.0	---	---
21	6.5	6.0	9.0	8.0	11.5	10.5	18.0	15.5	15.0	14.5	---	---
22	7.0	5.5	9.0	8.0	10.5	10.0	18.5	15.5	16.5	14.5	---	---
23	7.0	6.0	8.5	7.0	10.5	10.0	18.0	15.5	17.0	14.5	---	---
24	6.5	6.5	8.0	6.5	10.5	10.0	18.0	15.5	17.0	15.5	---	---
25	6.5	6.0	10.0	6.5	11.0	10.0	18.0	15.5	18.0	15.5	---	---
26	8.5	6.0	11.5	8.5	11.0	10.0	18.0	15.5	18.0	15.5	---	---
27	9.5	6.5	13.0	9.5	13.0	10.5	18.0	15.0	19.0	15.5	---	---
28	9.5	6.0	13.0	9.5	14.5	11.5	18.0	15.5	19.0	16.0	---	---
29	6.0	5.5	12.0	9.5	15.0	13.0	18.5	15.5	19.0	16.0	---	---
30	8.0	5.5	11.5	8.5	15.0	13.0	18.0	15.5	17.0	15.0	---	---
31	---	---	11.0	9.0	---	---	18.5	15.5	16.5	14.0	---	---
MONTH	9.5	5.5	13.0	6.0	15.0	8.5	18.5	11.5	20.0	13.0	---	---

14242700 TOUTLE RIVER NEAR CASTLE ROCK, WASH.

LOCATION.--Lat 46°18'40", long 122°54'45", in SW¼NE¼ sec.34, T.10 N., R.2 W., Cowlitz County, at bridge on Interstate 90, 2.5 miles north of Castle Rock, and at mile 0.3.

DRAINAGE AREA.--512 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1962, October 1962 to September 1970 (partial-record station), October 1971 to September 1972 (discontinued). Prior to October 1971, at site 0.7 mile upstream.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)
OCT.								
04...	1155	808	4.7	1.5	5.9	.4	30	25
26...	1215	1880	4.1	1.0	4.2	.8	25	21
NOV.								
02...	1315	2600	3.6	1.0	3.5	.9	22	18
29...	1255	5260	2.9	.8	2.8	.3	18	15
DEC.								
06...	1210	7320	2.9	.7	2.6	.4	15	12
20...	1230	2750	3.3	1.1	3.5	1.2	21	17
JAN.								
03...	1225	1990	3.9	1.2	3.9	.7	22	18
17...	1245	3240	3.1	1.1	3.3	.6	20	16
FEB.								
01...	1330	2140	3.0	1.0	3.6	.9	22	18
14...	1235	5400	2.6	.8	2.8	.1	16	13
MAR.								
06...	1215	16700	2.3	.7	2.3	.6	15	12
20...	1235	5180	2.8	.7	2.3	.4	19	16
APR.								
03...	1215	2730	3.2	.9	3.2	1.1	21	17
17...	1215	2780	3.5	.9	3.4	.7	23	19
MAY								
01...	1215	2820	3.1	1.0	3.3	.8	21	17
15...	1225	4170	2.7	.7	2.5	.4	19	16
JUNE								
05...	1245	2640	3.0	.8	3.1	.7	19	16
19...	1135	1820	3.7	1.1	3.8	1.2	23	19
JULY								
05...	1150	1550	3.4	.9	4.2	1.4	20	16
17...	1309	1350	3.6	1.1	3.8	.5	22	18
31...	1255	880	4.1	1.2	5.2	1.4	26	21
AUG.								
14...	1235	620	4.3	1.4	5.9	.8	30	25
SEP.								
05...	1315	500	4.5	1.5	7.3	.9	33	27
18...	1240	490	5.1	1.7	6.9	1.1	38	31

14242700 TOUTLE RIVER NEAR CASTLE ROCK, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED SULFATE (SO_4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
OCT.									
04...	3.3	3.3	.10	.000	.03	.02	.000	.020	18
26...	2.8	3.7	.08	.010	.01	.08	.010	.030	14
NOV.									
02...	3.0	3.6	.11	.010	.05	.15	.010	.040	13
29...	3.3	2.0	.21	.000	.07	.25	.010	.060	11
DEC.									
06...	1.3	1.6	.24	.000	.04	.23	.010	.030	10
20...	3.0	2.4	.26	.000	.02	.23	.010	.010	13
JAN.									
03...	2.7	3.6	.18	.000	.06	.19	.010	.010	15
17...	2.7	2.8	.04	.000	.01	.25	.010	.020	12
FEB.									
01...	3.6	3.0	.22	.010	.05	.23	.010	.020	12
14...	2.2	3.6	.12	.000	.08	.40	.010	.040	10
MAR.									
06...	2.4	1.9	.40	.000	.27	.36	.010	.17	9
20...	1.5	1.6	.11	.000	.04	.07	.010	.020	10
APR.									
03...	3.4	2.8	.37	.000	.10	.12	.010	.010	12
17...	2.7	2.2	.29	.010	.13	.07	.010	.040	12
MAY									
01...	5.0	3.1	.63	.010	.15	.06	.000	.020	12
15...	1.7	2.0	.11	.000	.00	.05	.000	.010	10
JUNE									
05...	2.6	1.6	.15	.010	.13	.04	.000	.030	11
19...	6.5	3.0	.50	.000	.06	.03	.000	.020	14
JULY									
05...	3.4	2.4	1.7	.010	.24	.01	.010	.030	12
17...	6.2	3.0	.07	.000	.01	.03	.010	.020	14
31...	4.5	3.0	.12	.020	.02	.02	.020	.030	15
AUG.									
14...	4.7	4.1	.35	.000	.04	.05	.060	.10	16
SEP.									
05...	4.9	4.9	.31	.010	.09	.02	.020	.060	17
18...	5.0	5.5	.26	.000	.09	.02	.050	.050	20

14242700 TOUTLE RIVER NEAR CASTLE ROCK, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.								
04...	0	65	7.3	13.4	25	6	11.0	200
26...	0	56	7.0	8.5	45	5	12.0	800
NOV.								
02...	0	46	7.1	6.3	66	6	12.7	300
29...	0	37	7.3	7.4	55	10	11.9	600
DEC.								
06...	0	35	7.3	6.3	78	10	12.6	800
20...	0	46	7.0	5.7	35	4	12.6	200
JAN.								
03...	0	48	7.3	2.5	41	5	13.8	160
17...	0	43	6.9	5.4	33	5	12.6	130
FEB.								
01...	0	46	7.2	2.1	28	5	14.1	100
14...	0	35	7.1	5.0	49	15	12.7	350
MAR.								
06...	0	30	6.7	5.7	68	55	12.9	350
20...	0	34	7.0	7.0	28	5	12.4	100
APR.								
03...	0	43	7.0	7.3	22	2	12.5	70
17...	0	42	7.2	5.7	24	3	13.1	70
MAY								
01...	0	42	7.2	8.0	25	4	12.1	100
15...	0	37	7.2	9.5	19	4	11.5	250
JUNE								
05...	0	41	7.4	12.8	10	2	10.8	160
19...	0	53	7.1	14.9	9	1	10.8	200
JULY								
05...	0	72	7.3	18.5	14	2	9.6	200
17...	0	51	7.7	18.6	11	2	9.1	500
31...	0	71	7.3	19.0	20	5	9.3	250
AUG.								
14...	0	77	6.9	17.3	15	2	9.5	210
SEP.								
05...	0	81	7.4	17.5	25	8	9.5	500
18...	0	83	7.6	12.6	16	3	10.5	800

14243000 COWLITZ RIVER AT CASTLE ROCK, WASH.
(International hydrologic decade station)

LOCATION.--Lat 46°16'30", long 122°54'48", in SW¼SE¼ sec.10, T.9 N., R.2 W., Cowlitz County, at gaging station 40 ft downstream from Arkansas Valley Road bridge in Castle Rock, 2.7 miles downstream from Toutle River, and at mile 17.3.

DRAINAGE AREA.--2,238 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1959, August 1966 to September 1972.
Water temperatures: August 1950 to September 1972 (discontinued).

EXTREMES.--1971-72:
Water temperatures: Maximum, 17.0°C Aug. 27, 28; minimum, 3.5°C Jan. 28-Feb. 5.

Period of record:
Water temperatures: Maximum (1950-62, 1963-72), 24.0°C July 28-30, 1958; minimum, freezing point Jan. 29, 30, 1951.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT.											
12...	1030	4220	13	5.8	.9	4.1	.4	25	21	2.3	4.4
DEC.											
16...	1315	15700	13	4.4	1.0	3.1	.5	25	21	.5	2.9
FEB.											
14...	1615	17900	14	4.6	1.0	2.8	.5	24	20	2.6	2.2

DATE	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)
OCT.										
12...	.1	.05	54	44	18	0	64	7.2	11.1	5
DEC.										
16...	.0	.27	--	39	15	0	48	7.1	5.6	5
FEB.										
14...	.1	.17	--	40	16	0	45	6.7	4.4	5

14243000 COWLITZ RIVER AT CASTLE ROCK, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	11.0	9.0	9.0	8.5	8.5	6.0	5.5	4.0	3.5	5.0	4.5
2	11.5	11.0	9.0	9.0	8.5	8.5	6.0	5.5	3.5	3.5	4.5	4.5
3	12.0	11.5	9.0	9.0	8.5	8.0	5.5	5.5	3.5	3.5	5.0	4.5
4	12.0	11.5	9.0	9.0	8.0	8.0	5.5	5.5	4.0	3.5	5.0	4.5
5	12.0	11.0	9.0	9.0	8.0	8.0	5.5	5.5	4.0	3.5	5.5	4.5
6	11.5	11.0	9.0	9.0	8.0	8.0	5.5	5.5	4.0	4.0	5.5	5.0
7	12.0	11.0	9.0	9.0	8.0	7.0	5.5	5.5	4.0	4.0	5.0	4.5
8	12.0	11.0	9.0	9.0	7.0	6.5	5.5	5.5	4.5	4.0	5.0	4.5
9	12.0	11.5	9.0	9.0	6.5	6.5	5.5	5.5	4.5	4.5	5.0	4.5
10	12.0	11.5	9.0	9.0	6.5	6.5	5.5	5.5	4.5	4.0	5.0	4.5
11	12.0	11.5	9.5	9.0	6.5	6.5	5.5	5.5	4.5	4.5	5.5	5.0
12	11.5	11.0	9.0	9.0	6.5	6.5	5.5	5.5	4.5	4.5	5.5	5.5
13	12.0	11.5	9.0	9.0	6.5	5.5	5.5	5.0	4.5	4.5	6.0	5.5
14	11.5	10.5	9.0	9.0	5.5	5.5	5.0	5.0	4.5	4.5	6.0	5.5
15	11.0	10.5	9.0	9.0	5.5	5.5	5.0	5.0	4.5	4.5	6.0	5.5
16	11.0	10.5	9.0	9.0	6.0	5.5	5.0	5.0	5.0	4.5	6.0	5.5
17	10.5	10.0	9.0	8.5	6.0	6.0	5.0	5.0	5.0	4.5	6.0	5.5
18	10.5	10.0	8.5	8.5	6.0	6.0	5.0	5.0	5.0	5.0	6.0	6.0
19	10.5	10.5	8.5	8.5	6.0	6.0	5.5	5.0	5.0	5.0	6.0	6.0
20	10.5	10.0	9.0	8.5	6.0	6.0	5.5	5.5	5.0	5.0	6.0	5.5
21	10.0	10.0	9.0	9.0	6.0	6.0	5.5	5.5	5.0	4.5	6.0	5.5
22	10.0	10.0	9.0	8.5	6.0	6.0	5.5	5.5	5.0	5.0	6.0	6.0
23	10.0	10.0	8.5	8.5	6.0	6.0	5.5	5.0	5.0	4.5	6.5	5.5
24	10.0	10.0	8.5	8.5	6.0	6.0	5.0	4.5	5.0	4.5	6.5	6.0
25	10.0	10.0	8.5	8.5	6.0	6.0	4.5	4.5	5.0	4.5	6.0	5.5
26	10.0	10.0	8.5	8.5	6.0	6.0	4.5	4.0	5.0	4.5	6.5	5.5
27	10.0	9.5	8.5	8.5	6.0	5.5	4.0	4.0	6.5	4.5	6.5	6.0
28	9.5	9.0	8.5	8.5	5.5	5.5	4.0	3.5	6.5	6.0	6.5	6.0
29	9.0	9.0	8.5	8.5	5.5	5.5	4.0	3.5	6.0	5.0	6.5	5.5
30	9.0	9.0	8.5	8.5	5.5	5.5	4.0	3.5	---	---	6.5	5.5
31	9.0	9.0	---	---	6.0	5.5	4.0	3.5	---	---	6.5	5.5
MONTH	12.0	9.0	9.5	8.5	8.5	5.5	6.0	3.5	6.5	3.5	6.5	4.5

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	6.0	9.0	7.0	11.0	9.5	13.5	10.0	15.0	13.5	15.5	14.5
2	6.5	5.5	9.0	8.0	11.5	10.0	14.0	11.0	13.5	13.0	16.5	14.5
3	6.5	5.5	9.5	7.0	11.5	10.5	14.5	13.0	14.0	11.0	16.5	15.0
4	6.5	6.0	10.5	8.0	10.5	9.0	15.0	13.5	14.5	11.5	16.0	15.0
5	7.0	6.5	10.5	8.5	10.5	9.5	14.5	11.5	15.0	13.0	15.5	14.5
6	7.0	6.5	10.5	8.5	11.5	10.0	13.0	10.5	15.0	14.0	14.5	12.0
7	6.5	6.0	8.5	8.5	11.5	10.0	12.0	10.5	15.5	15.0	13.5	12.0
8	6.5	6.0	8.5	8.5	12.0	10.5	12.0	11.0	15.5	14.0	13.5	12.0
9	6.5	6.0	8.5	7.0	12.0	10.5	13.0	10.5	15.0	14.5	12.0	12.0
10	6.5	6.0	9.5	8.0	10.5	10.0	11.0	10.0	15.0	14.0	13.5	12.0
11	6.5	6.0	10.0	8.0	10.5	10.0	11.0	10.5	14.5	13.5	14.0	13.0
12	6.5	6.0	11.5	9.5	10.5	10.0	11.5	11.0	14.0	13.5	13.5	11.5
13	6.5	6.0	11.5	9.5	11.5	10.0	13.0	11.0	14.5	14.0	14.5	13.5
14	6.5	6.5	10.0	8.5	11.5	10.5	13.5	11.0	14.5	13.5	14.0	13.5
15	7.0	6.5	9.5	8.5	10.5	10.5	14.0	10.5	13.5	13.0	14.5	13.5
16	7.0	6.0	8.5	8.0	11.0	10.0	14.5	11.0	14.0	12.0	14.0	13.5
17	6.5	6.0	9.0	8.5	11.5	10.0	14.0	11.5	14.0	13.0	13.5	13.0
18	6.5	5.5	9.0	8.5	12.0	10.5	13.5	11.0	13.5	13.0	13.0	11.5
19	6.5	6.0	10.0	9.0	12.0	10.5	13.5	11.0	15.0	13.5	11.5	11.5
20	6.5	6.0	10.0	9.5	11.5	9.5	14.5	11.0	14.5	14.0	11.5	11.0
21	6.5	6.5	9.5	8.5	10.5	10.0	14.5	12.0	14.0	13.5	12.0	11.0
22	8.0	5.5	9.0	8.5	10.0	9.5	14.0	11.5	14.5	13.5	12.0	11.0
23	8.0	6.5	9.0	8.5	10.0	9.5	14.0	11.0	15.0	14.5	11.0	10.5
24	7.0	6.5	8.5	8.5	10.0	9.5	13.5	11.0	15.0	14.0	10.5	10.5
25	7.0	6.5	9.0	8.0	10.0	9.5	13.0	11.0	14.5	13.5	11.0	10.5
26	8.0	6.5	10.0	8.5	10.0	9.5	13.5	11.5	15.0	14.0	11.0	11.0
27	9.0	6.5	10.5	8.5	11.0	10.0	14.0	13.5	17.0	14.5	11.0	10.0
28	9.0	7.0	10.5	9.5	13.5	10.0	14.0	13.5	17.0	15.5	11.0	10.5
29	7.0	6.5	10.5	9.5	13.5	11.0	15.0	14.0	15.5	15.0	11.5	10.5
30	8.5	6.5	12.0	9.5	12.0	10.5	15.0	14.5	15.5	14.0	12.0	11.5
31	---	---	12.0	9.5	---	---	15.0	14.5	15.5	14.0	---	---
MONTH	9.0	5.5	12.0	7.0	13.5	9.0	15.0	10.0	17.0	11.0	16.5	10.0

14244200 COWLITZ RIVER AT KELSO, WASH.

LOCATION.--Lat 46°08'44", long 122°54'47", near center of SE¼ sec.27, T.8 N., R.2 W., at Main Street bridge between Kelso and West Kelso, 3.6 miles upstream from Coweman River, and at mile 4.9.

DRAINAGE AREA.--2,349 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1960 to September 1966, October 1971 to September 1972.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance and coliform data furnished by Washington State Department of Ecology.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)
OCT.											
04...	1300	4020	6.7	1.2	6.1	1.1	26	21	2.3	9.6	.16
26...	1250	7850	5.2	1.0	3.2	.6	26	21	4.8	3.3	.08
NOV.											
02...	1345	10100	4.6	.8	2.9	.6	26	21	3.0	2.3	.11
29...	1335	17500	4.8	1.2	3.1	.5	19	16	2.3	2.9	.40
DEC.											
06...	1250	17700	3.5	.9	3.2	.5	18	15	2.3	2.2	.22
20...	1300	14000	4.7	1.1	3.2	.8	24	20	3.3	2.1	.21
JAN.											
03...	1300	12800	4.6	1.0	3.1	.6	24	20	2.5	2.9	--
17...	1315	12000	5.4	1.2	3.0	.7	23	19	2.1	2.1	.02
FEB.											
01...	1410	13100	4.7	1.2	3.0	.7	24	20	4.0	2.2	.35
14...	1315	17900	4.1	.9	2.9	.3	20	16	1.8	2.3	.10
MAR.											
06...	1300	45600	2.8	.6	2.5	.6	18	15	.1	1.2	.35
20...	1310	34300	4.5	.8	2.7	.4	25	21	2.8	1.8	.16
APR.											
03...	1310	15300	4.7	.9	3.1	.9	26	21	2.8	1.8	.29
17...	1300	13400	4.7	.9	3.0	.4	25	21	2.3	2.3	.23
MAY											
01...	1300	10400	5.0	1.1	3.3	.7	24	20	2.5	4.3	.46
15...	1420	14700	4.5	.9	2.6	.4	26	21	1.4	3.0	.13
JUNE											
05...	1325	22100	5.4	1.0	2.3	.3	26	21	2.6	1.8	.11
19...	1310	14600	5.5	.9	3.1	.4	27	22	2.3	2.7	.23
JULY											
05...	1320	8540	5.2	.9	4.0	.4	25	21	2.5	4.2	.45
17...	1425	10100	5.8	1.0	3.3	.4	47	39	2.3	3.0	.16
31...	1300	4720	7.5	1.2	7.2	.4	24	20	2.0	13	.06
AUG.											
14...	1340	4450	8.0	1.2	6.7	.5	27	22	5.7	12	.20
SEP.											
05...	1350	2980	7.4	1.2	7.7	.5	26	21	2.9	13	.13
18...	1325	3800	7.8	1.3	8.2	.5	27	22	1.8	15	.20

14244200 COWLITZ RIVER AT KELSO, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
04...	.000	.12	.02	.000	.020	22	0	79	7.2	13.7
26...	.010	.01	.10	.000	.020	17	0	55	7.2	9.7
NOV.										
02...	.000	.06	.16	.010	.020	15	0	47	7.2	8.4
29...	.000	.07	.33	.010	.050	17	1	44	7.3	8.7
DEC.										
06...	.000	.06	.25	.000	.030	12	0	45	7.3	7.3
20...	.000	.02	.30	.010	.010	16	0	51	6.9	6.7
JAN.										
03...	.000	.06	.23	.000	.010	16	0	51	7.3	4.8
17...	.000	.01	.39	.010	.030	18	0	50	7.0	5.6
FEB.										
01...	.000	.16	.33	.010	.040	17	0	53	7.2	3.5
14...	.000	.08	.48	.010	.040	14	0	50	6.9	4.8
MAR.										
06...	.000	.33	.49	.010	.13	9	0	37	6.6	6.3
20...	.000	.16	.16	.010	.050	15	0	44	7.0	6.7
APR.										
03...	.000	.14	.16	.020	.030	15	0	50	7.0	7.5
17...	.010	.12	.14	.010	.003	15	0	48	7.2	6.6
MAY										
01...	.010	.12	.14	.000	.030	17	0	53	7.1	9.2
15...	.000	.01	.07	.000	.010	15	0	45	7.2	9.6
JUNE										
05...	.000	.04	.02	.000	.060	18	0	50	7.3	11.1
19...	.000	.02	.05	.000	.020	17	0	54	7.2	18.3
JULY										
05...	.010	.03	.01	.000	.050	17	0	65	7.2	16.1
17...	.000	.02	.03	.000	.030	19	0	57	7.4	14.8
31...	.010	.01	.02	.010	.020	24	4	96	7.3	17.0
AUG.										
14...	.000	.02	.05	.010	.10	25	3	97	7.0	15.1
SEP.										
05...	.010	.04	.02	.020	.020	23	2	90	7.3	15.4
18...	.000	.12	.01	.010	.020	25	3	102	7.3	12.5

14244200 COWLITZ RIVER AT KELSO, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT.										
04...	18	4	10.2	100	--	--	--	--	--	--
26...	41	3	11.2	400	0	--	0	0	.2	50
NOV.										
02...	47	5	11.5	500	6	--	120	240	2700	30
29...	43	10	11.0	1000	0	--	2	0	.3	20
DEC.										
06...	65	10	11.8	800	2	--	2	1	.5	10
20...	21	5	11.8	200	1	--	1	2	.4	0
JAN.										
03...	29	4	12.4	150	5	--	1	1	.4	30
17...	21	5	12.2	170	--	0	1	1	.3	8
FEB.										
01...	35	9	13.1	150	--	0	3	1	.4	0
14...	49	15	12.3	700	--	0	4	5	.2	50
MAR.										
06...	66	40	12.2	600	--	0	8	16	.8	20
20...	30	15	12.8	200	--	0	2	6	.6	30
APR.										
03...	27	7	12.5	140	--	0	0	0	.0	0
17...	23	7	12.3	80	--	0	1	3	.2	8
MAY										
01...	24	5	11.4	70	--	0	1	2	.3	8
15...	21	5	12.1	120	--	0	2	5	.3	40
JUNE										
05...	15	4	11.6	--	--	0	0	2	.2	10
19...	9	3	11.4	110	--	0	2	5	.1	0
JULY										
05...	12	6	--	--	--	0	1	1	.1	0
17...	10	4	9.9	550	--	0	4	8	1.6	30
31...	12	3	9.3	100	--	0	1	0	.1	10
AUG.										
14...	15	3	9.2	90	--	0	1	3	.1	20
SEP.										
05...	14	3	9.3	1200	--	0	40	10	.3	20
18...	13	2	9.7	1600	--	0	10	6	2.0	20

14245000 COWEMAN RIVER NEAR KELSO, WASH.

LOCATION.--Lat 46°08'17", long 122°53'46", in NE¼ sec.35, T.8 N., R.2 W., at I-90 bridge on east edge of Kelso, 2.6 miles upstream from mouth and 4.6 miles downstream from gaging station.

DRAINAGE AREA.--125 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1961 to September 1972 (discontinued).
Water temperatures: July 1950 to September 1972 (discontinued)

EXTREMES.--1971-72:
Water temperatures: Maximum, not determined; minimum, 1.5°C during period Feb. 2-8.

Period of record:
Water temperatures: Maximum, 28.0°C July 27, 28, 1958; minimum, freezing point on several days during some winter months.

REMARKS.--Dissolved oxygen, pH, turbidity, color, specific conductance, and coliform data furnished by Washington State Department of Ecology. Temperature recorder at gaging station 4.6 miles upstream. Recorder not operating Feb. 3-8, and Apr. 19-26; range in temperature 1.5°C to 5.0°C and 5.5°C to 8.5°C, respectively. Temperature probe out of water during missing periods in August and September.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	DISSOLVED NITRITE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	DISSOLVED NITRATE (N) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT.								
04...	1325	109	.14	.000	.07	.18	.000	.020
26...	1310	551	--	.010	.07	.55	.010	.040
NOV.								
02...	1400	625	--	.010	.06	.74	.010	.030
29...	1405	1730	.38	.000	.09	.87	.010	.070
DEC.								
06...	1355	1750	.49	.000	.07	.93	.000	.040
20...	1325	743	.31	.000	.01	.75	.010	.010
JAN.								
03...	1320	484	.21	.000	.09	.73	.010	.010
17...	1345	1000	.07	.000	.02	.74	.010	.030
FEB.								
01...	1425	422	.31	.000	.09	.68	.010	.010
14...	1345	1100	.09	.000	.07	.83	.010	.040
MAR.								
06...	1325	2530	.30	.000	.21	.74	.010	.080
20...	1335	585	.05	.000	.04	.39	.010	.020
APR.								
03...	1325	457	.23	.000	.06	.53	.010	.010
17...	1325	537	.26	.010	.13	.41	.010	.030
MAY								
01...	1325	489	.25	.010	.06	.41	.000	.020
15...	1350	272	.12	.010	.00	.13	.000	.010
JUNE								
05...	1345	138	.27	.010	.08	.11	.000	.030
19...	1330	92	1.3	.010	.09	.07	.000	.030
JULY								
05...	1340	64	.43	.010	.08	.08	.010	.030
17...	1445	57	.46	.010	.10	.10	.000	.040
31...	1355	41	.36	.020	.10	.05	.010	.090
AUG.								
14...	1400	34	.30	.000	.08	.09	.030	.050
SEP.								
05...	1420	29	1.1	.010	.61	.04	.17	.24
18...	1345	35	.98	.000	.61	.04	.090	.19

14245000 COWEMAN RIVER NEAR KELSO, WASH.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT.							
04...	65	7.2	13.6	29	8	9.7	600
26...	54	7.0	8.9	29	9	11.3	800
NOV.							
02...	49	7.2	7.3	70	7	12.0	400
29...	41	7.1	8.5	57	20	11.3	800
DEC.							
06...	45	7.3	7.3	68	15	11.9	800
20...	48	7.0	6.0	31	7	12.1	400
JAN.							
03...	51	7.3	3.3	35	7	13.2	210
17...	42	7.0	5.8	33	9	12.2	200
FEB.							
01...	48	7.2	2.3	27	4	13.7	300
14...	38	7.1	4.9	33	10	12.2	500
MAR.							
06...	36	6.7	6.7	61	30	12.1	320
20...	40	7.0	8.2	23	4	11.7	250
APR.							
03...	47	7.0	7.5	25	4	12.1	150
17...	48	7.1	6.3	24	5	12.3	200
MAY							
01...	47	7.1	8.9	23	4	11.7	200
15...	50	7.1	15.5	26	3	9.0	800
JUNE							
05...	64	7.2	18.4	19	2	8.8	300
19...	78	7.0	18.3	25	3	8.7	500
JULY							
05...	147	7.2	22.0	23	4	7.4	800
17...	87	7.2	24.4	28	6	6.7	800
31...	95	7.1	22.5	33	5	6.8	1200
AUG.							
14...	100	6.9	19.6	28	5	7.3	4000
SEP.							
05...	120	7.2	18.4	29	7	5.1	4500
18...	119	7.1	15.0	44	9	7.1	2000

14245000 COWEMAN RIVER NEAR KELSO, WASH.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.0	7.0	6.0	8.0	6.5	5.0	5.0	3.0	2.0	6.0	6.0
2	10.5	9.5	7.0	7.0	7.0	6.5	5.0	4.5	2.0	1.5	6.0	6.0
3	11.0	9.5	8.0	7.0	6.5	6.5	4.5	3.5	---	---	6.0	6.0
4	12.0	11.0	8.0	8.0	6.5	6.0	4.0	3.5	---	---	6.5	5.5
5	13.0	12.0	8.0	5.5	7.0	6.0	4.0	4.0	---	---	6.5	6.5
6	13.0	13.0	5.5	5.0	7.0	7.0	5.0	4.0	---	---	6.5	5.5
7	13.5	13.0	6.5	5.0	7.0	5.5	5.0	4.5	---	---	6.0	5.5
8	13.5	12.0	7.0	6.5	6.0	5.5	4.5	4.5	5.0	---	7.0	5.5
9	13.0	11.0	8.0	7.0	6.0	6.0	5.0	4.5	5.0	5.0	7.0	6.5
10	13.0	12.0	8.5	8.0	6.0	5.5	5.0	4.5	5.0	4.0	8.0	7.0
11	13.0	13.0	9.0	8.5	5.5	5.5	5.5	5.0	5.0	4.5	8.0	7.0
12	13.0	12.0	9.0	9.0	5.5	5.5	5.5	5.5	6.0	5.0	8.0	8.0
13	13.0	12.0	9.0	8.5	6.0	5.5	5.5	5.0	6.0	5.5	8.0	8.0
14	12.0	10.5	8.5	8.0	6.0	5.5	5.5	5.0	5.5	5.5	8.5	8.0
15	10.5	9.5	8.0	8.0	6.0	5.5	5.5	5.0	6.0	5.5	9.0	8.0
16	9.5	8.0	8.5	8.0	6.0	5.5	5.0	5.0	6.5	6.0	9.5	8.5
17	8.5	6.5	8.0	7.0	6.0	5.5	5.0	5.0	6.5	6.0	9.5	8.0
18	8.0	7.0	7.0	7.0	6.0	6.0	5.5	5.0	7.0	6.0	9.0	8.0
19	9.0	8.0	8.0	7.0	6.0	5.5	6.0	5.5	7.0	6.5	8.5	8.0
20	9.0	9.0	8.5	8.0	5.5	5.5	6.0	6.0	6.5	6.0	8.0	7.0
21	9.0	8.5	8.5	8.0	5.5	5.5	6.0	6.0	6.0	5.5	8.5	8.0
22	9.0	8.5	8.0	6.5	6.0	5.5	6.0	6.0	6.0	6.0	8.5	7.0
23	9.0	9.0	6.5	6.0	6.0	5.5	6.0	5.5	6.0	6.0	7.0	7.0
24	9.0	9.0	7.0	6.5	6.0	5.5	5.5	5.5	6.0	5.5	7.0	5.5
25	9.0	8.5	7.0	7.0	6.0	6.0	5.5	5.0	6.0	5.5	5.5	5.0
26	9.0	8.5	8.0	7.0	6.0	5.5	5.0	3.5	5.5	5.0	6.0	5.5
27	8.5	6.5	8.0	8.0	5.5	5.0	3.5	3.0	7.0	5.5	6.0	6.0
28	6.5	5.5	8.0	8.0	5.0	4.5	3.0	2.0	7.0	6.5	7.0	5.5
29	5.5	5.0	8.0	8.0	4.5	4.5	2.0	2.0	6.5	6.0	7.0	5.5
30	5.5	5.0	8.0	8.0	4.5	4.5	2.0	2.0	---	---	8.0	6.0
31	6.0	5.5	---	---	5.0	4.5	3.0	2.0	---	---	7.0	6.5
MONTH	13.5	5.0	9.0	5.0	8.0	4.5	6.0	2.0	7.0	1.5	9.5	5.0

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	6.0	9.0	6.5	15.0	12.0	19.0	15.5	20.0	18.0	---	---
2	8.0	6.0	11.0	9.0	15.5	13.0	20.0	16.0	19.5	17.0	---	---
3	8.0	6.0	12.0	9.5	15.5	13.5	20.5	16.5	22.0	17.0	---	---
4	8.5	8.0	12.0	10.0	15.5	13.5	21.0	17.0	24.0	18.5	---	---
5	9.5	8.5	13.0	10.5	16.5	14.0	21.5	18.5	---	---	---	---
6	8.5	6.0	12.0	10.0	17.0	15.0	20.5	18.0	---	---	---	---
7	6.5	6.0	10.0	10.0	17.0	15.0	19.5	17.0	---	---	---	---
8	6.5	6.0	10.0	9.5	17.0	14.5	18.0	16.5	---	---	16.5	15.0
9	7.0	5.5	10.0	9.5	16.5	14.5	16.5	15.5	---	---	15.5	15.5
10	6.5	5.5	11.5	9.0	14.5	13.0	15.5	14.5	---	---	17.0	14.5
11	6.5	6.0	13.5	10.5	14.0	13.0	15.0	14.5	---	---	21.0	13.0
12	6.5	6.0	15.0	11.5	13.0	12.0	15.5	14.5	---	---	---	---
13	7.0	6.0	15.5	13.5	16.0	12.0	18.0	15.5	---	---	---	---
14	6.5	6.5	15.5	13.5	16.0	15.0	20.0	16.5	---	---	---	---
15	8.0	6.5	15.0	12.0	15.0	13.5	21.5	18.0	---	---	---	---
16	6.5	5.5	12.0	11.5	14.0	12.0	23.0	18.5	17.0	15.5	---	---
17	6.0	5.5	12.0	10.5	15.5	13.0	23.5	19.0	16.5	16.5	---	---
18	6.5	5.5	11.0	9.5	17.0	14.0	22.0	19.0	18.5	15.0	---	---
19	---	---	13.0	9.5	18.0	15.0	21.5	17.0	21.0	16.5	13.0	12.0
20	---	---	13.5	12.0	18.0	15.5	21.5	17.0	21.0	18.0	13.5	13.0
21	---	---	13.5	11.0	15.5	14.5	21.0	18.0	18.5	16.5	13.5	13.0
22	---	---	12.0	10.5	14.5	13.5	21.5	17.0	19.5	17.0	13.5	13.0
23	---	---	11.5	10.0	13.5	13.0	21.0	18.5	23.5	17.0	13.0	11.5
24	---	---	10.0	9.0	13.0	12.0	19.5	18.0	---	---	11.5	11.0
25	8.0	---	11.5	8.0	13.0	11.5	20.0	16.5	---	---	11.0	10.0
26	9.5	6.5	14.0	10.5	13.0	12.0	20.5	16.0	---	---	10.5	10.0
27	10.5	8.5	15.5	13.0	14.5	12.0	20.5	16.0	---	---	10.0	9.5
28	10.5	9.0	17.0	14.0	17.0	14.0	21.5	16.5	---	---	10.0	9.5
29	8.0	6.5	16.5	15.0	17.0	16.0	22.0	17.0	---	---	11.5	9.5
30	9.0	6.0	16.0	13.5	16.5	15.0	22.0	16.5	---	---	11.5	10.5
31	---	---	15.5	14.0	---	---	21.5	18.0	---	---	---	---
MONTH	10.5	---	17.0	6.5	17.5	11.5	23.5	14.5	---	---	---	---

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

SNOHOMISH RIVER BASIN

12143400 SOUTH FORK SNOQUALMIE RIVER ABOVE ALICE CREEK NEAR GARCIA, WASH.
(Lat 47°24'55", long 121°35'10")

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)
OCT.									
12...	1200	--	--	--	--	--	--	--	--
12...	1230	--	--	--	--	--	--	--	--
NOV.									
01...	--	5.5	2.5	.2	2.6	.2	11	9	3.5

DATE	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT.									
12...	--	--	.11	.000	.01	.02	--	.010	.020
12...	--	--	.10	.000	.04	.14	--	.030	.040
NOV.									
01...	3.7	.0	--	--	--	--	.22	--	--

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.								
12...	--	--	--	--	--	--	5.6	--
12...	--	--	--	--	--	--	11.1	--
NOV.								
01...	47	25	7	0	31	6.3	--	30

NOOKSACK RIVER BASIN

12204200 GALENA CREEK NEAR GLACIER, WASH.
(Lat 47°24'55", long 121°35'10")

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)
FEB.											
28...	1045	3.5	2.6	.3	5.7	.4	9	7	2.8	11	.1

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED ORTHO. PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)	DIS-SOLVED COPPER (CU) (UG/L)
FEB.										
28...	.10	.000	38	31	8	0	51	6.2	7	2

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

CHELAN RIVER BASIN

12451500 RAILROAD CREEK AT LUCERNE, WASH.
(Lat 48°11'45", long 120°35'50")

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
MAR.										
20...	1130	15	8.4	1.2	1.6	1.1	28	23	12	.1
SEP.										
22...	--	6.1	4.6	.6	.8	.5	13	10	9.7	.1

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
MAR.										
20...	.1	.07	--	54	26	3	69	7.1	3.3	5
SEP.										
22...	.0	.00	31	29	14	3	46	6.8	--	10

ENTIAT RIVER BASIN

12452800 ENTIAT RIVER NEAR ARDENVOIR, WASH.
(Lat 47°48'30", long 120°24'50")

DATE	TIME	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
MAR.										
20...	1030	24	4.5	.8	1.9	1.0	27	22	2.7	.1

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
MAR.									
20...	.1	.08	49	15	0	43	7.0	3.3	10

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